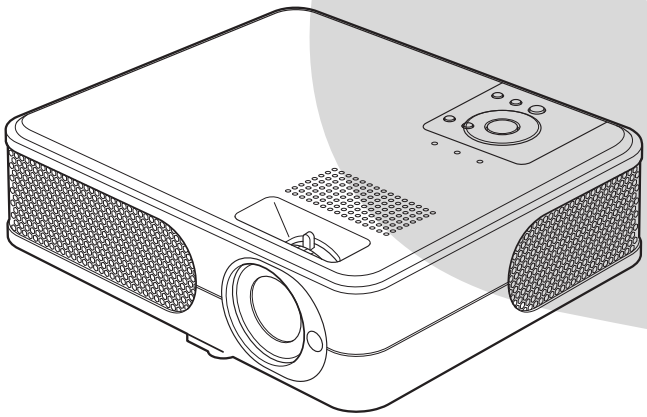
TOSHIBA

FILE NO. 330-200711GR

SERVICE MANUAL

3LCD DATA PROJECTOR

TLP-X2000E/B/U/C
TLP-X2500E/B/U/C
TLP-X3000E/B/U/C



The above models are classified as green product (s) (*1), as indicated by the underlined serial number (s).
This Service Manual describes replacement parts for green product (s). When repairing any green product (s), use the parts described in this manual and lead-free solder (*2).
For (*1) and (*2) , see the next page.

Published in Japan, July 2007 GREEN

(*1) GREEN PRODUCT PROCUREMENT

The EC is actively promoting the WEEE & RoHS Directives that define standards for recycling and reuse of Waste Electrical and Electronic Equipment and for the Restriction of the use of certain Hazardous Substances. From July 1, 2006, the RoHS Directive will prohibit any marketing of new products containing lead.

Increasing attention is given to issues related to the global environmental. Toshiba Corporation recognizes environmental protection as a key management tasks, and is doing its utmost to enhance and improve the quality and scope of its environmental activities. In line with this, Toshiba proactively promotes Green Procurement, and seeks to purchase and use products, parts and materials that have low environmental impacts. Green procurement of parts is not only confined to manufacture. The same green parts used in manufacture must also be used as replacement parts.

(*2) LEAD-FREE SOLDER

This product is manufactured using lead-free solder as a part of a movement within the CE industry at large to be environmentally responsible. Lead-free solder must be used in the servicing and repair of this product.

WARNING

This product is manufactured using lead free solder.

DO NOT USE LEAD BASED SOLDER TO REPAIR THIS PRODUCT !

The melting temperature of lead-free solder is higher than that of leaded solder by 86°F to 104 °F (30°C to 40°C). Use of a soldering iron designed for lead-based solders to repair product made with lead-free solder may result in damage to the component and or PCB being soldered. Great care should be made to ensure high-quality soldering when servicing this product–especially when soldering large components, through-hole pins, and on PCBs–as the level of heat required to melt lead-free solder is high.

Table of Contents

Specifications

■ List of general specifications

Item		Specification
Consumption Power		TLP-X2000: 280 W
Weight		TLP-X2000: 2.8 kg
External Dimensions		TLP-X2000: 288 × 92 × 247 mm (W × H × D)
Cabinet material		PC resin and PC+ABS resin
Conditions for usagenvironment		Temp: 5°C to 35°C; relative humidity: 30% to 70%
LCD Panel	Display method	3-panel transmission
	Panel size	0.6 type
	Drive system	TFT active matrix
	Picture elements	786,432 pixels (1024H× 768V)
Lens		Zoom lens F=1.6-1.88 f=18.6-22.3 mm
Lamp		High-pressure mercury lamp (180 W)
Connection terminal	Projection screen size	33-300 inches
	Projection distance	1.19-9.13 m
	Speaker	1W (Mono)
	COMPUTER 1 IN terminal	Mini D sub 15 pin RGB / Y/PB/PR (dual use)
	COMPUTER 2 IN terminal	Mini D sub 15 pin RGB / Y/PB/PR / MONITOR OUT (dual use)
	S-VIDEO terminal	Mini DIN 4 pin
	AUDIO (L/R) terminal	RCA Pin Jack ×2
	VIDEO terminal	RCA Pin Jack
	AUDIO IN terminal	3.5mm dia. stereo mini-jack
	AUDIO OUT terminal	3.5mm dia. stereo mini-jack
	CONTROL terminal	Mini DIN 8 pin (RS-232C)

Notes

- This model complies with the above specifications.
- Designs and specifications are subject to change without notice.
- This model may not be compatible with features and/or specifications that may be added in the future.

Specifications

■ List of general specifications

Item		Specification
Consumption Power		TLP-X2500: 300 W
		TLP-XC2500: 300 W
Weight		TLP-X2500: 2.8 kg
		TLP-XC2500: 4.0 kg
External Dimensions (including protruding parts)		TLP-X2500: 288 × 92 × 247 mm (W × H × D)
		TLP-XC2500: 370.5 × 92 × 249 mm (W × H × D)
Cabinet material		PC resin and PC+ABS resin
Conditions for usage environment		Temp: 5°C to 35°C; relative humidity: 30% to 70%
LCD Panel	Display method	3-panel transmission
	Panel size	0.63 type
	Drive system	TFT active matrix
	Picture elements	786,432 pixels (1024H × 768V)
Lens		Zoom lens F=1.6-1.88 f=18.6-22.3 mm
Lamp		High-pressure mercury lamp (200 W)
Connection terminal	Projection screen size	33-300 inches
	Projection distance	1.15-8.80 m
	Speaker	1W (Mono)
	COMPUTER 1 IN terminal	Mini D sub 15 pin RGB / Y/PB/PR (dual use)
	COMPUTER 2 IN terminal	Mini D sub 15 pin RGB / Y/PB/PR / MONITOR OUT (dual use)
	S-VIDEO terminal	Mini DIN 4 pin
	AUDIO (L/R) terminal	RCA Pin Jack × 2
	VIDEO terminal	RCA Pin Jack
	AUDIO IN terminal	3.5mm dia. stereo mini-jack
	AUDIO OUT terminal	3.5mm dia. stereo mini-jack
	CONTROL terminal	Mini DIN 8 pin (RS-232C)

■ Document camera specifications (Models equipped with document camera)

Item	Specification
Cameral lens	F=3.0, f=9.6 mm
Focus adjustment	Manual
Zoom adjustment	None (Adjust with the distance from the object)
Image Pick-Up Device	3 million pixel 1/2" color CMOS Sensor
Pixels	QXGA (horizontal 2048 × vertical 1536)
Illumination	High brightness LED LED illumination

Notes

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Specifications

■ List of general specifications

Item		Specification
Consumption Power		TLP-X3000: 320 W
		TLP-XC3000: 320 W
Weight		TLP-X3000: 2.8 kg
		TLP-XC3000: 4.0 kg
External Dimensions (including protruding parts)		TLP-X3000: 288 × 92 × 247 mm (W × H × D)
		TLP-XC3000: 370.5 × 92 × 249 mm (W × H × D)
Cabinet material		PC resin and PC+ABS resin
Conditions for usage environment		Temp: 5°C to 35°C; relative humidity: 30% to 70%
LCD Panel	Display method	3-panel transmission
	Panel size	0.7 type
	Drive system	TFT active matrix
	Picture elements	786,432 pixels (1024H × 768V)
Lens		Zoom lens F=1.8-2.1 f=26.5-31.5 mm
Lamp		High-pressure mercury lamp (220 W)
Connection terminal	Projection screen size	33-300 inches
	Projection distance	1.45-11.29 m
	Speaker	1W (Mono)
	COMPUTER 1 IN terminal	Mini D sub 15 pin RGB / Y/PB/PR (dual use)
	COMPUTER 2 IN terminal	Mini D sub 15 pin RGB / Y/PB/PR / MONITOR OUT (dual use)
	S-VIDEO terminal	Mini DIN 4 pin
	AUDIO (L/R) terminal	RCA Pin Jack × 2
	VIDEO terminal	RCA Pin Jack
	AUDIO IN terminal	3.5mm dia. stereo mini-jack
	AUDIO OUT terminal	3.5mm dia. stereo mini-jack
	CONTROL terminal	Mini DIN 8 pin (RS-232C)

■ Document camera specifications (Models equipped with document camera)

Item	Specification
Cameral lens	F=3.0, f=9.6 mm
Focus adjustment	Manual
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Image Pick-Up Device	3 million pixel 1/2" color CMOS Sensor
Pixels	QXGA (horizontal 2048 × vertical 1536)
Illumination	High brightness LED LED illumination

Notes

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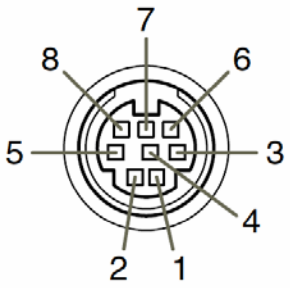
■ CONTROL terminal

● Pin assignment



Mini DIN 8 pin connector

Pin No.	Signal Name	Description
1	RXD	Receiving data
2	CTS	Consent to send
3	DSR	Data set ready
4	GND	Signal ground
5	RTS	Request to send
6	N.C	No connection
7	TXD	Sending data
8	GND	Signal ground

● Interface format

1 Communication method — RS-232C, 9600bps, No Parity, Data Length: 8 bits; Stop Bit Length: 1 bit

2 Communication format — STX (02h) | Command (3Byte) | ETX (03h)

Only 1 command valid per communication.

3 Data format — For input commands, only ASCII-compliant all-uppercase alphanumeric characters supported.

4 Replies

Acknowledge — ACK (06h) | CR (0Dh) | Data ... Normally ended

ACK (06h) | ESC (1Bh) ... Aborted

No acknowledge — NAK (15h)

If commands are to be sent consecutively, wait for the response from the projector before sending the next command.

● Main Commands

Item	Command
Power on	**PON**
Power off	**POF**
Icon display on	**MO0**
Icon display off	**MO1**
Auto setting (RGB input)	**PAT**
Status display on	**DON**
Status display off	**DOF**

Note

• Contact your dealer for control cable and other commands.

■ Separately sold product

Replacement Lamp Model TLPLW11

Using the Menus

You can call up on-screen menus, and conduct a number of adjustments and settings using the operation buttons on the control panel (main unit side) and remote control.

■ How to use the menus

The menu shown below is for operation instructions purposes and might differ from the actual display.

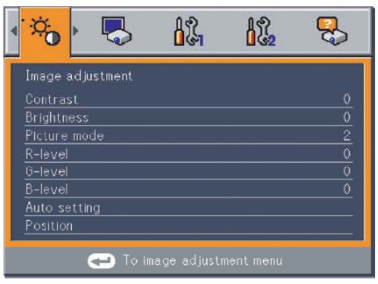
1. Press the MENU button

Display the Setting display menu.

2. Select a Category

Select a category by using ◀▶
There are following 5 categories:

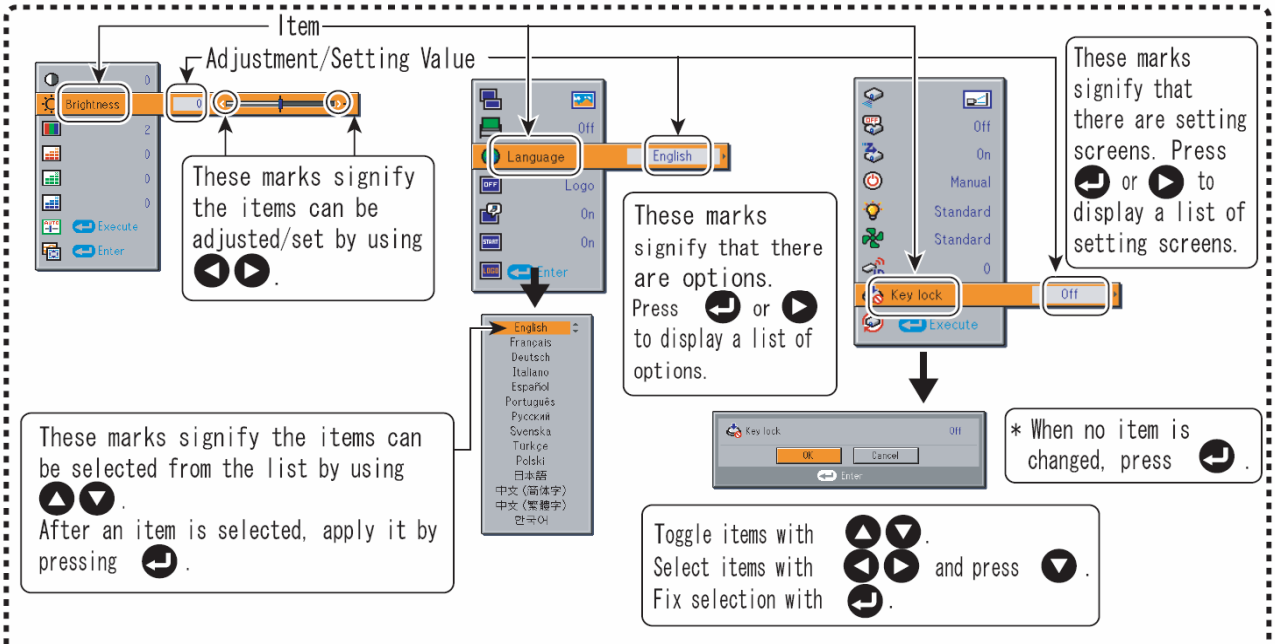
- Image adjustment menu
- Display setting menu
- Default setting 1 menu
- Default setting 2 menu
- Status display menu



Displays the current adjustments and settings of selected category.
Item shown with gray cannot be adjusted with the current input source.

3. Adjustments & Settings

Press ↵ or ▼ to open the menu.

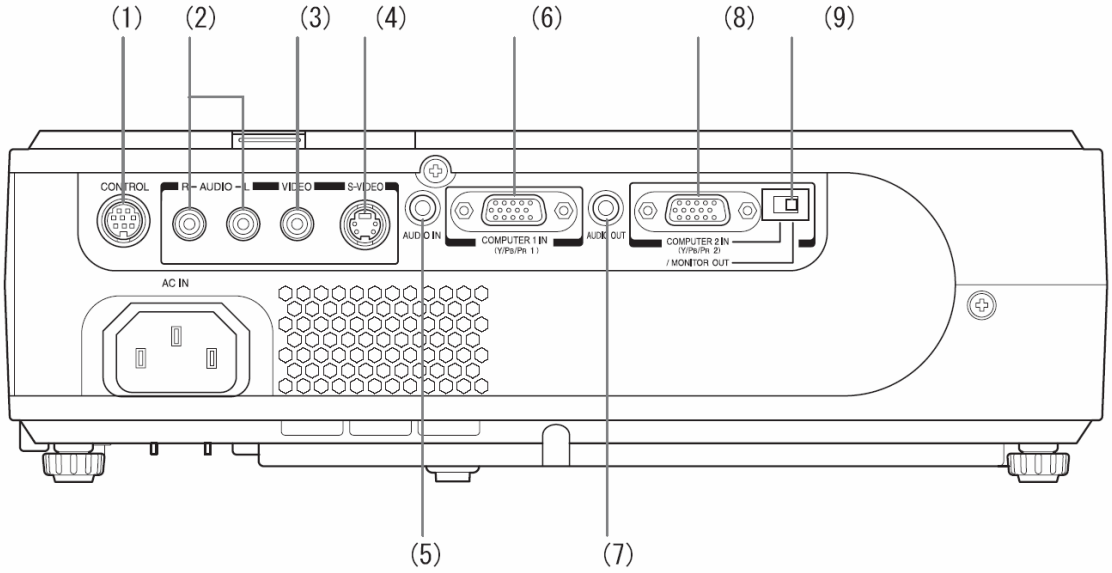


- The figure shows displays given for operation instructions purposes. As the display may differ depending on the item, use the following pages as a reference.
- To return to previous item, press the RETURN button.

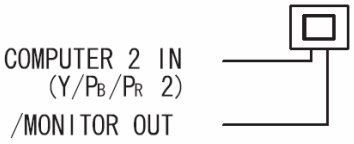
4. End

Press the MENU button.
(The menu disappears about 30 seconds after the last operation.)

Names of the Terminals on the Rear Panel



Name	: Main Function
(1) CONTROL terminal	: When operating the projector via a computer, connect this to the controlling computer's RS-232C port.
(2) AUDIO (L/R) terminal	: Input audio signals from video equipment.
(3) VIDEO terminal	: Input video signals from video equipment.
(4) S-VIDEO terminal	: Input S video signals from video equipment.
(5) AUDIO IN terminal	: Input audio signals from a computer, or from video equipment with a component video signal output terminal.
(6) COMPUTER 1 IN terminal	: Input RGB signal from a computer or other source or a component video signal ($Y/P_B/P_R$) from video equipment.
(7) AUDIO OUT terminal	: Outputs audio signals.
(8) COMPUTER 2 IN terminal (Also used for MONITOR OUT terminal)	: Inputs RGB signal from a computer or other source or a component video signal ($Y/P_B/P_R$) rom video equipment. It can also be used as MONITOR OUT terminal by the switch of (9).
(9) Switch	: Switches between COMPUTER 2 IN and MONITOR OUT.



List of Supported Signals

■ List of supported signals (RGB signals)

This projector supports the following RGB signals. Note, however, that depending on the computer model, the screen may show flicker or streaking. Please adjust the projector if this happens.

Resolution	Mode	Refresh rate (Hz)	H-frequency (kHz)	Clock (MHz)
720 x 400	720x400_85	85.039	37.927	35.500
640 x 480	VGA_60	59.940	31.469	25.175
	VGA_72	72.809	37.861	31.500
	VGA_75	75.000	37.500	31.500
	VGA_85	85.008	43.269	36.000
800 x 600	SVGA_56	56.250	35.156	36.000
	SVGA_60	60.317	37.879	40.000
	SVGA_72	72.188	48.077	50.000
	SVGA_75	75.000	46.875	49.500
	SVGA_85	85.061	53.674	56.250
832 x 624	MAC16"	74.550	49.725	57.283
1024 x 768	XGA_60	60.004	48.363	65.000
	XGA_70	70.069	56.476	75.000
	XGA_75	75.029	60.023	78.750
	XGA_85	84.997	68.667	94.500
	MAC19"	74.700	60.134	79.857
1152 x 864	SXGA1_75	75.000	67.500	108.000
1280 x 960	QuadVGA_60	60.000	60.000	108.000
	QuadVGA_85	85.002	85.938	148.500
1280 x 1024	SXGA3_60	60.020	63.981	108.000
	SXGA3_75	75.025	79.976	135.000
	SXGA3_85	85.024	91.146	157.500
1400 x 1050	SXGA+	59.978	65.317	121.750
1600 x 1200	UXGA_60	60.000	75.000	162.000
	UXGA_65	65.000	81.250	175.500
	UXGA_70	70.000	87.500	189.000
	UXGA_75	75.000	93.750	202.500
	UXGA_85	85.000	106.250	229.500

Note

- Signals whose resolution exceeds the native resolution (1024 × 768 pixels) will be compressed. For this reason, some information may be lost, or image quality may be affected.

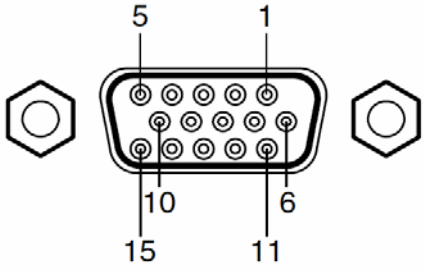
■ List of supported signals (Y/PB/PR signals)

Signal format	fh(kHz)	fv(Hz)
480i(525i)@60Hz	15.73	59.94
480p(525p)@60Hz	31.47	59.94
576i(625i)@50Hz	15.63	50.00
576p(625p)@50Hz	31.25	50.00
720p(750p)@60Hz	45.00	60.00
720p(750p)@50Hz	37.50	50.00
1080i(1125i)@60Hz	33.75	60.00
1080i(1125i)@50Hz	28.13	50.00

■ List of supported signals (Video, S-Video signals)

Video mode	fh(kHz)	fv(Hz)	fsc(MHz)
NTSC	15.73	60	3.58
PAL	15.63	50	4.43
SECAM	15.63	50	4.25 or 4.41
PAL-M	15.73	60	3.58
PAL-N	15.63	50	3.58
PAL-60	15.73	60	4.43
NTSC4.43	15.73	60	4.43

■ Pin assignment of COMPUTER 1 IN, COMPUTER 2 IN & MONITOR OUT terminals



Mini D sub 15 Pin connector

Input Signal
- RGB input
  RGB signals: 0.7V (p-p) 75 Ω
  Horizontal sync signal: TTL level (Pos/neg polarity)
  Vertical sync signal: TTL level (Pos/neg polarity)
- Y/PB/PR input
  Y signal: 1.0V (p-p) 75 Ω
  PB/PR signals: 0.7V (p-p) 75 Ω

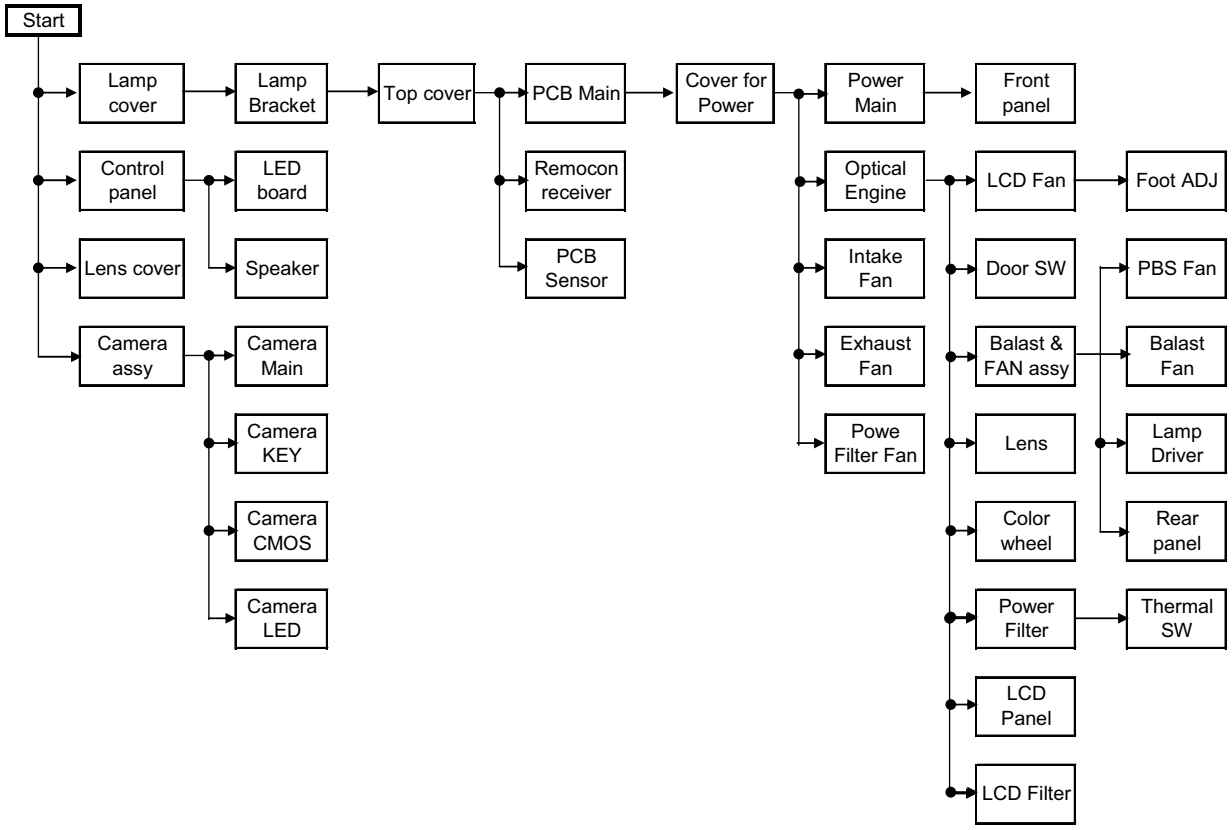
Pin No.	Pin description	
	During RGB input	During Y/PB/PR input
1	Video signal (R)	Color difference signal (PR)
2	Video signal (G)	Luminance signal (Y)
3	Video signal (B)	Color difference signal (PB)
4	GND	*
5	GND	*
6	GND (R)	GND (PR)
7	GND (G)	GND (Y)
8	GND (B)	GND (PB)
9	N.C	*
10	GND	*
11	GND	*
12	N.C	*
13	Horizontal sync signal	*
14	Vertical sync signal	*
15	N.C	*

* Do not connect anything.

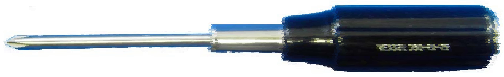
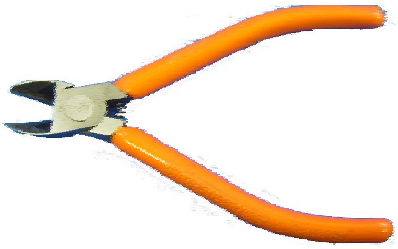
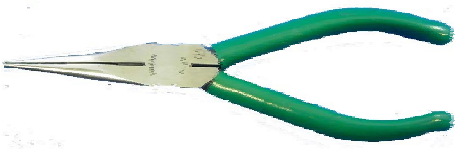
Replaceable Part Hierarchy

Replaceable Part Hierarchy

The flow chart below shows what parts must be removed to access each replaceable part in the projector.
The parts on the first level (Ex.Lamp cover) are accessible without removing any other parts.
The move levels down that a part is, the more parts you need to remove in order to access it.

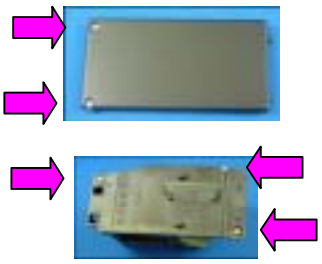


Required Tools

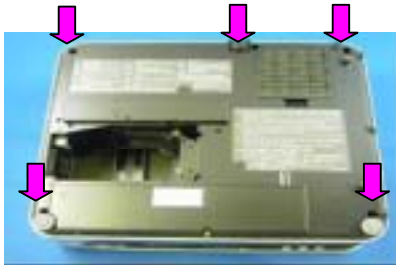
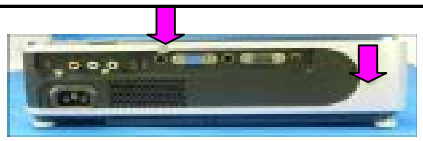
Item	Photo
Driver bit (+) No 2	
Box driver M3	
Driver bit (+) No 0	
Torque driver bit (+) No 2	
Nippers	
Cutting pliers	

Parts Replacement

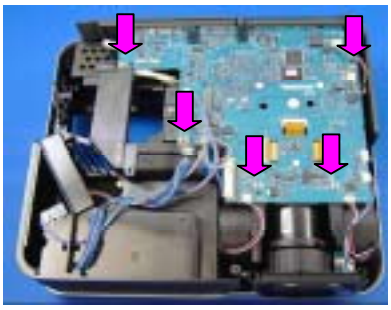
1.Lamp

No	Figure	Explanation
1		Remove two lamp cover screws. Remove three lamp screws.
2		Lamp is pulled out.

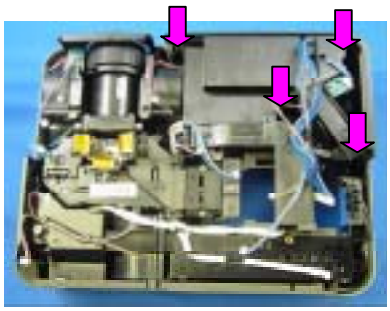
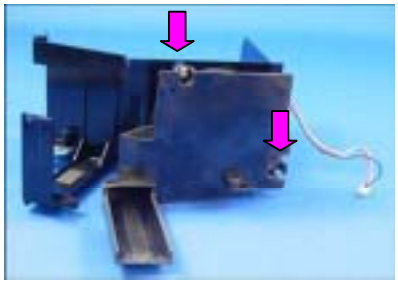
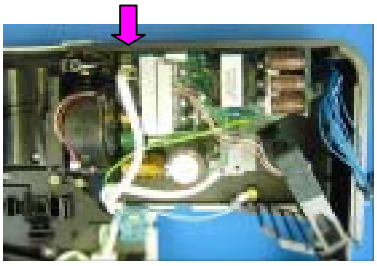
2.Top Cover

		Remove five screws at the bottom.
	  	Remove two screws at the rear. Remove a screw at the right. Remove a screw at the left.
3		Top cover is removed.

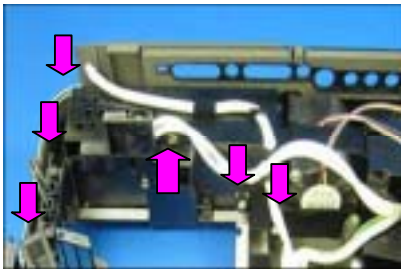
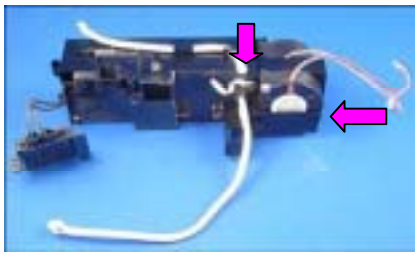
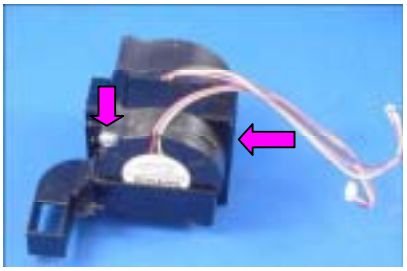
3.Main Board

Step	Figure	Explanation
1		All the connectors on a main board unit are removed. Remove five screws.
2		Remove two screws at the rear cover.
3		Main board is removed.

4.Main Power Unit

Step	Figure	Explanation
1		Remove four screws.
2		Cover & Power Intake FAN are removed. Remove two screws.
3		Power Intake FAN are removed.
4		Remove a screw.
5		Main Power Unit is taken out.

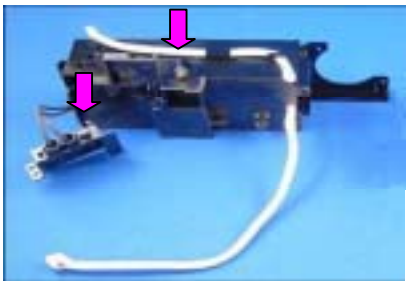
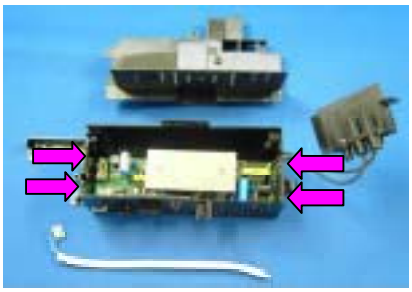
5.PBS & Ballast FANs

Step	Figure	Explanation
1		Remove six screws.
2		Balast & FAN assy is taken out. Remove two screws.
3		Remove two screws.
4		Ballast FANs are removed. PBS FANs are removed.

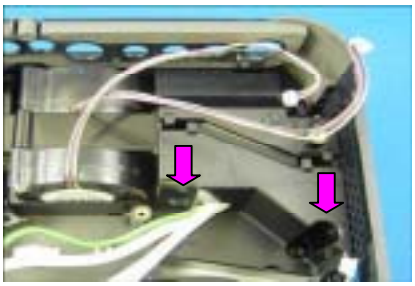
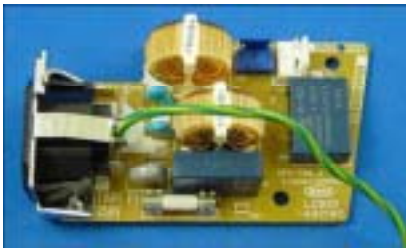
6.Exhaust Fan

1		Remove no screw. Note. May be very tight.
2		Exhaust Fan is removed.

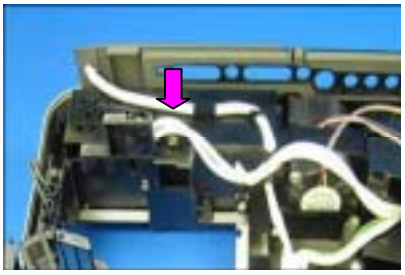
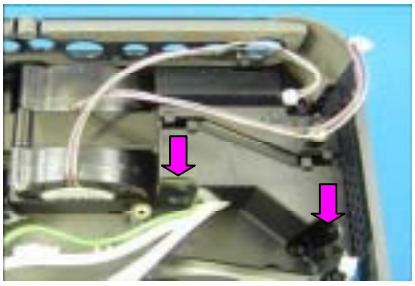
7.Ballast

1		Remove two screws.
2		Cover is removed. Pinch a stud with cutting pliers. (4 points) Then pull up PC Board.
3		Ballast is removed.

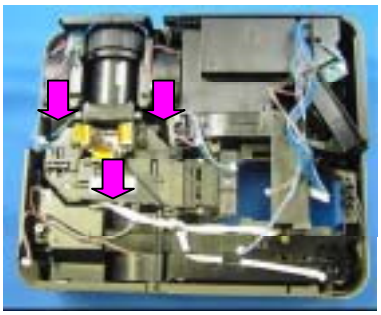
8.Filter Power

Step	Figure	Explanation
1		**Remove two screws.**
2		**Cover is removed.**
3		**Filter Power is taken out.**

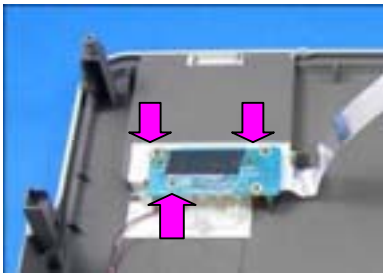
9.Thermal Switch

Step	Figure	Explanation
1		Remove a screws.
2		Remove two screws.
3		Cover is removed.
4		Thermal Switch is removed.

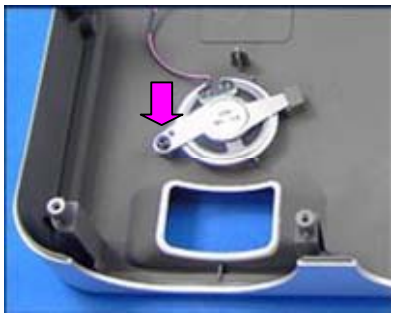
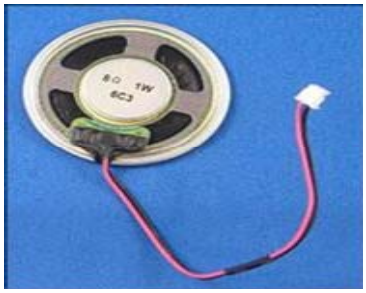
10.Optical Emgine

Step	Figure	Explanation
1		Remove three screws.
2		Optical Engine is taken out.

11.Relay Board

Step	Figure	Explanation
1		Remove three screws.
2		Relay Board is removed.

15.Speaker

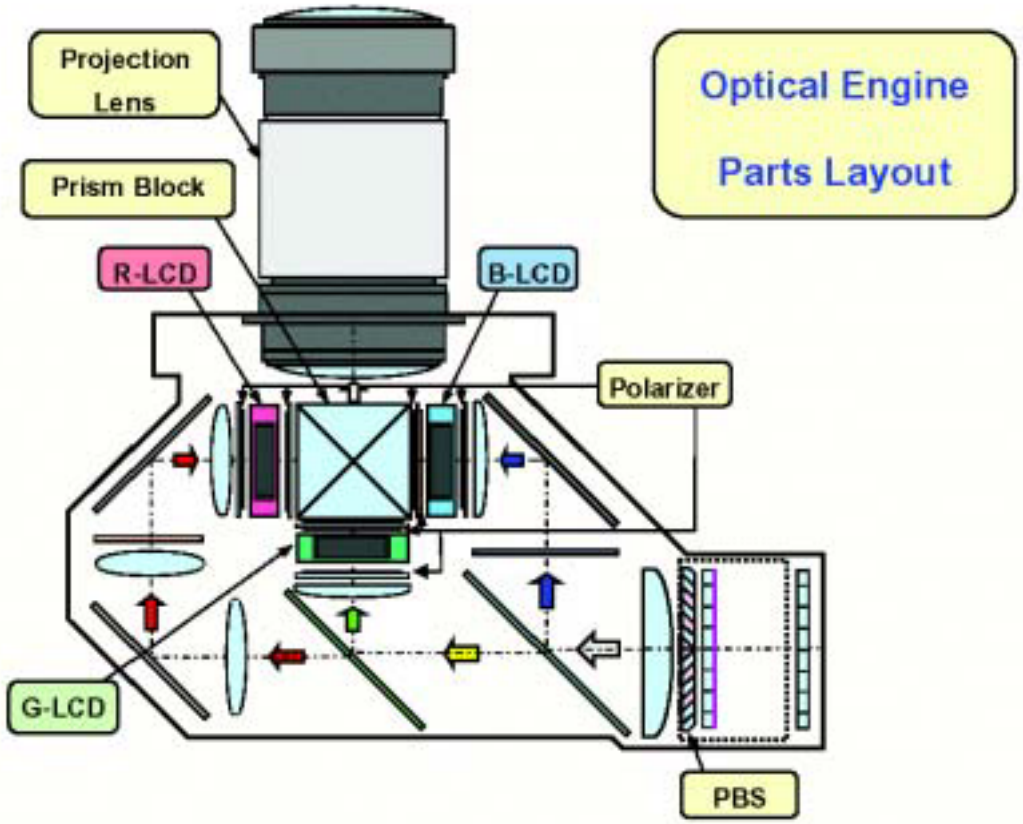
1		**Remove a screws.**
2		**Speaker is removed.**

Replacement of Optical Parts

CAUTION !

1) When you replace each part, take an air blow, and prevent adhesion of dust.

2) Not touching glass side of optical parts. When you touched it, wipe it off with optics paper and so on.
Because it is easy to scratch in particular, be careful to the handling of a polarizer.



Projection Lens

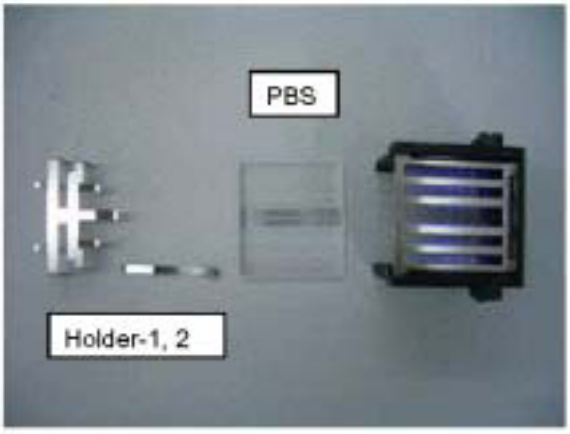
1. A Projection Lens comes off when you remove four screws.

2. Put on a new Projection Lens so that a knob of a focus ring becomes the top.

PBS (Polarized Beam Splitter)

1. Remove two screws.

2. Remove Holder-1 and 2, afterwards remove PBS from PBS Unit.



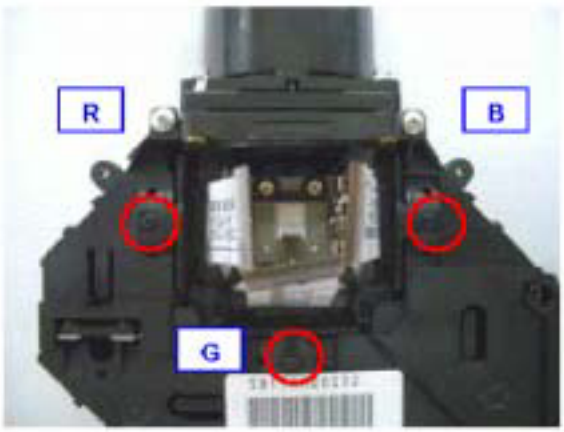
3. Replace a PBS.

There is directionality on the front and back to a PBS, and put it on like a photo.

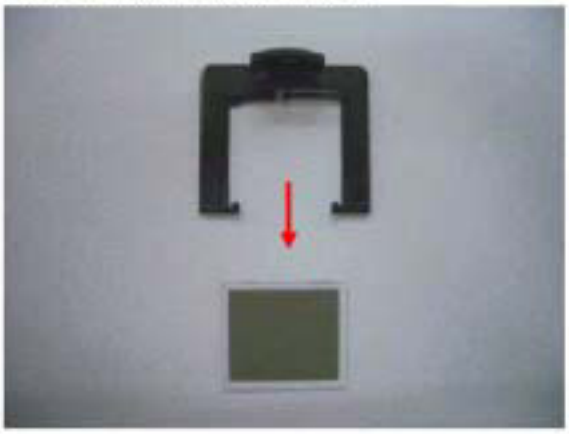
4. Put on Holder-1 and 2, and slot a PBS Unit in an Optical Engine.

Polarizer (Entrance)

1. Remove screws like photos.

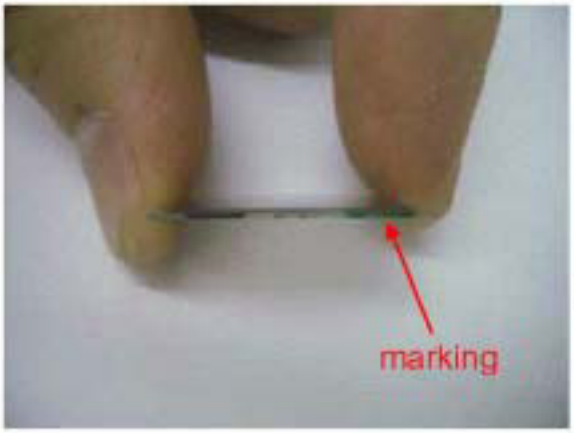


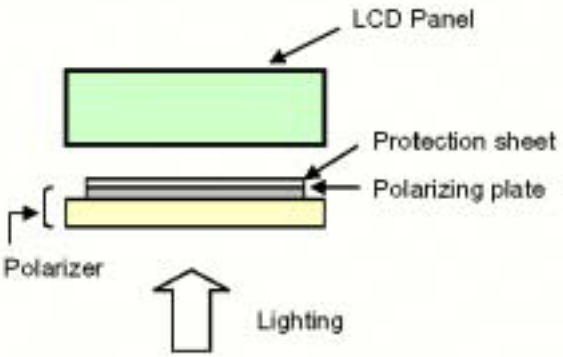
2. Remove a Polarizer from a Holder.



3. Be careful to the following points when you put on a new Polarizer to a polarizer holder.

1) Get the marking in the upper part.





2) Make a polarizing plate side to the LCD Panel side.

3) Take off Protection sheet of a polarizing plate side.

4. Tighten a polarizer holder to become the screw hole center.

Polarizer (Exit)

1. Remove one screw, and take off a Prism Block.

<Lower side>

2. Remove one screw of a polarizer holder.

Take a polarizer off the side.

3. When put on a new Polarizer, be careful to the following points.

1) Get the marking in the upper part.

2) Make a polarizing plate side to the LCD Panel side.

3) Take off protection sheet of a polarizing plate side.

4. Hold a polarizer with a polarizer holder.

LCD Panel

1. Remove Prism block from Optical Engine.

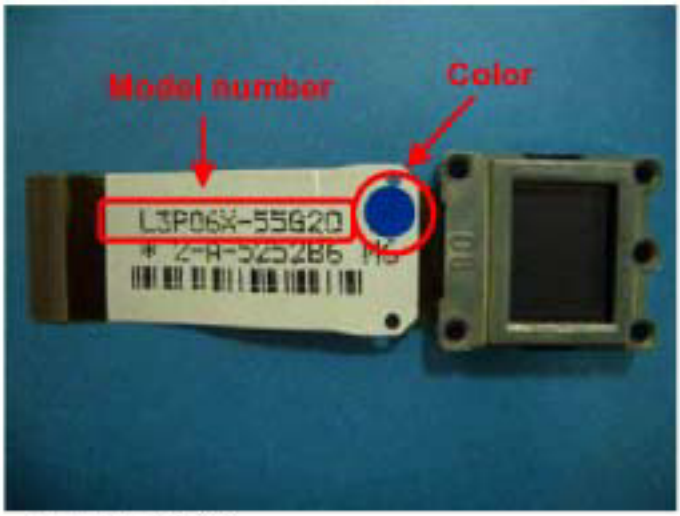
2. Remove three screws.

3. Check the model number of LCD Panel.

There are two kinds of model number on an RGB panel each.

Model number : L3P06X-65G00 (X2500) : L3P06X-66G00

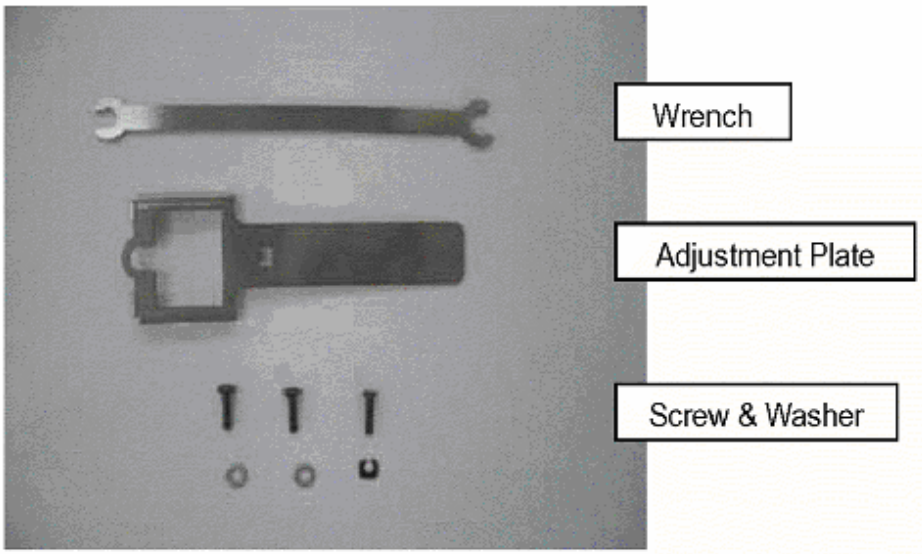
Model number : L3P07X-65G00 (X3000) : L3P07X-66G00

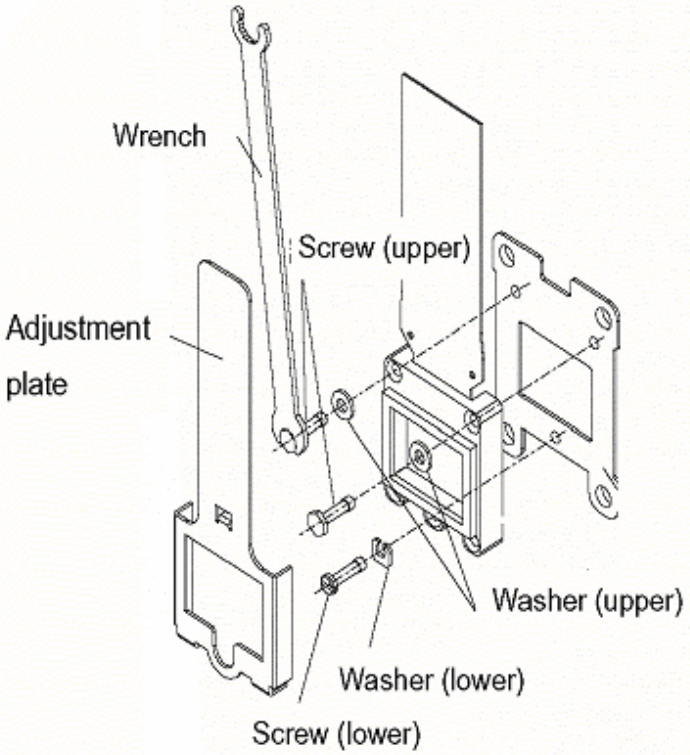


Example : X2000

4. Alignment a pixel with a panel installation tools.

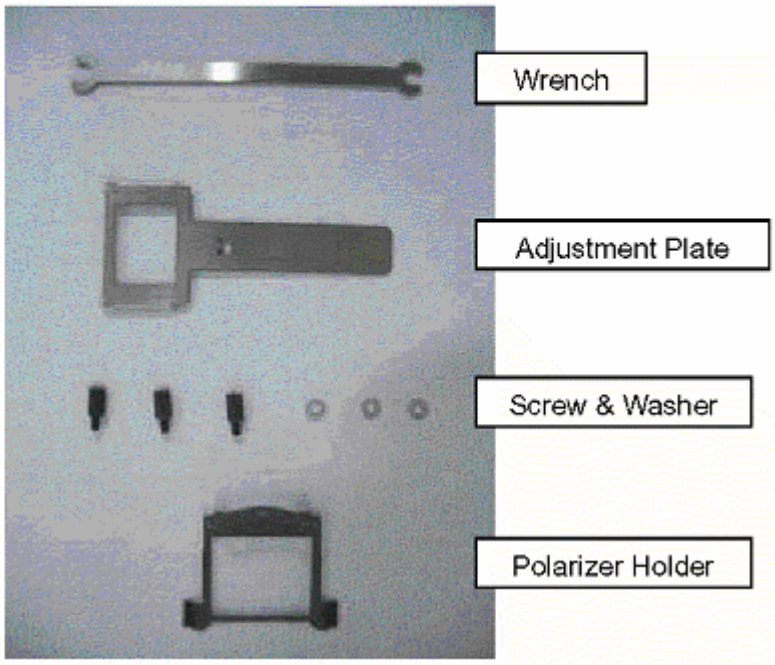
a.Panel installation tools (X2000, X2500)

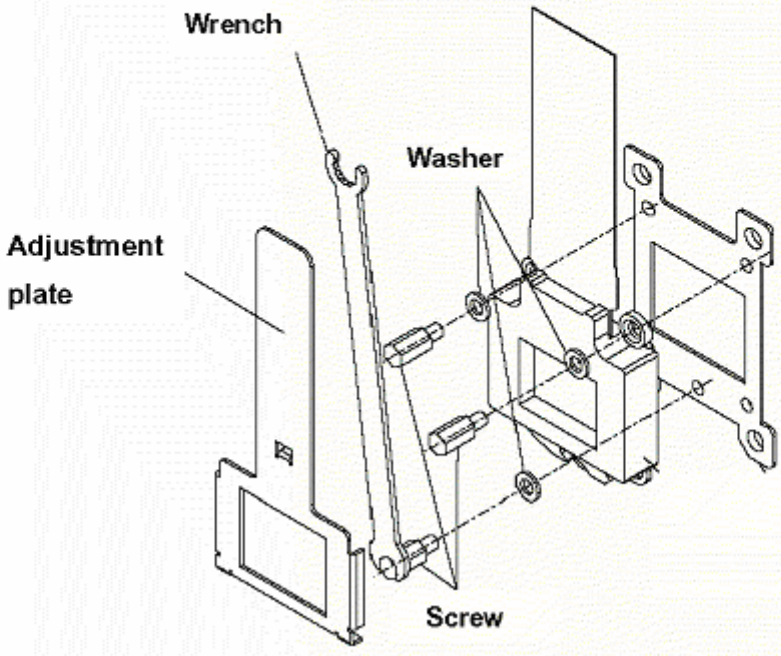




b.Panel installation tools (X3000)

Before adjustment, exchange an Entrance Polarizer holder with a holder for adjustment.

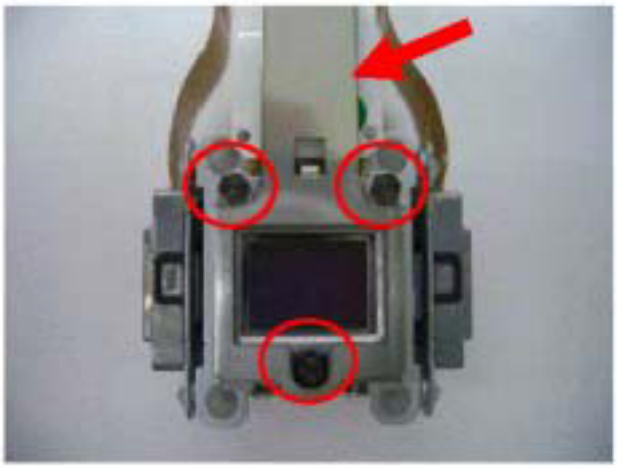




5. Tighten temporary a LCD Panel with screws and washers.

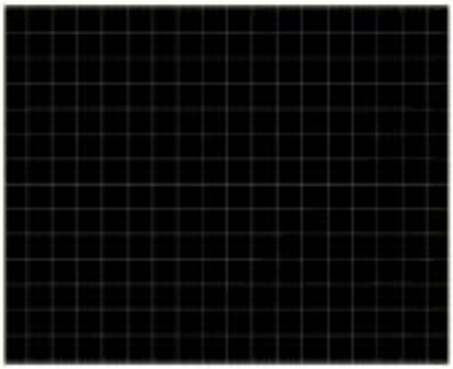
   Use a minus screw and an offset washer in bottom of a LCD Panel.

   Get Prism block to an Optical Engine after putting on adjustment plate.



6. Set an Engine to a projector and extend a predetermined cable with the extension cable.

7. Project a cross hatch signal, and alignment a pixel with a panel installation tools.



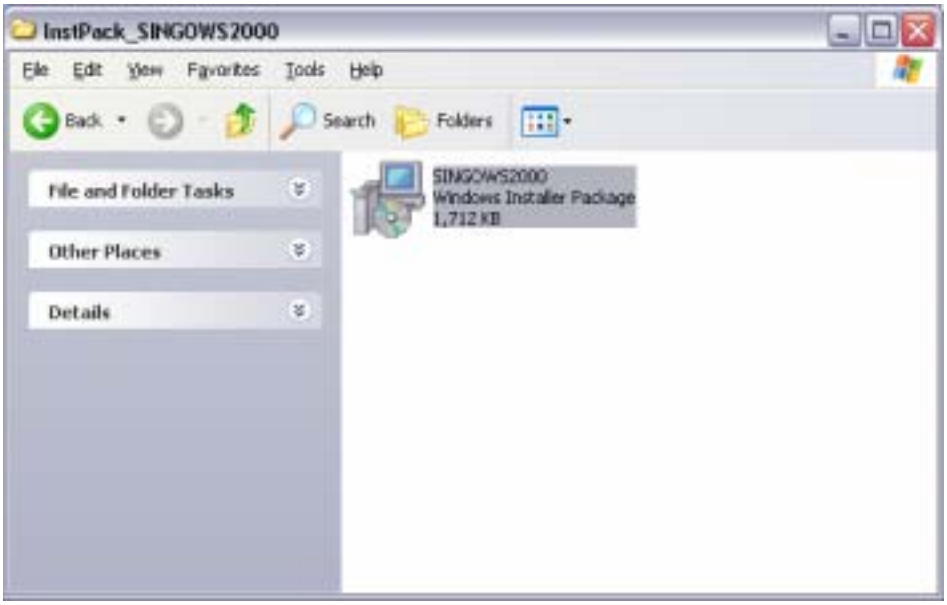
8. When pixel alignment is completed, take off Adjustment plate and build a projector.

9. Set up **VCOM, GAMMA** and **SHADING** with the adjustment software (See Electrical Adjustment).

SINGOWS 2000

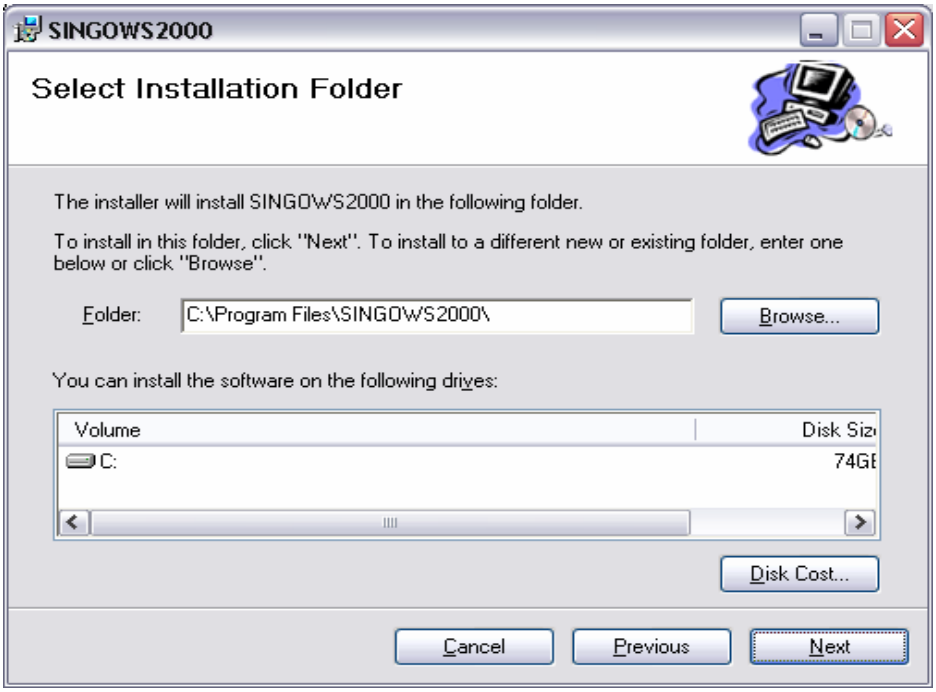
Install the Software on the Computer

The software you download is bundled into one .MSI file.
Double-click the file to install the signal generating software.

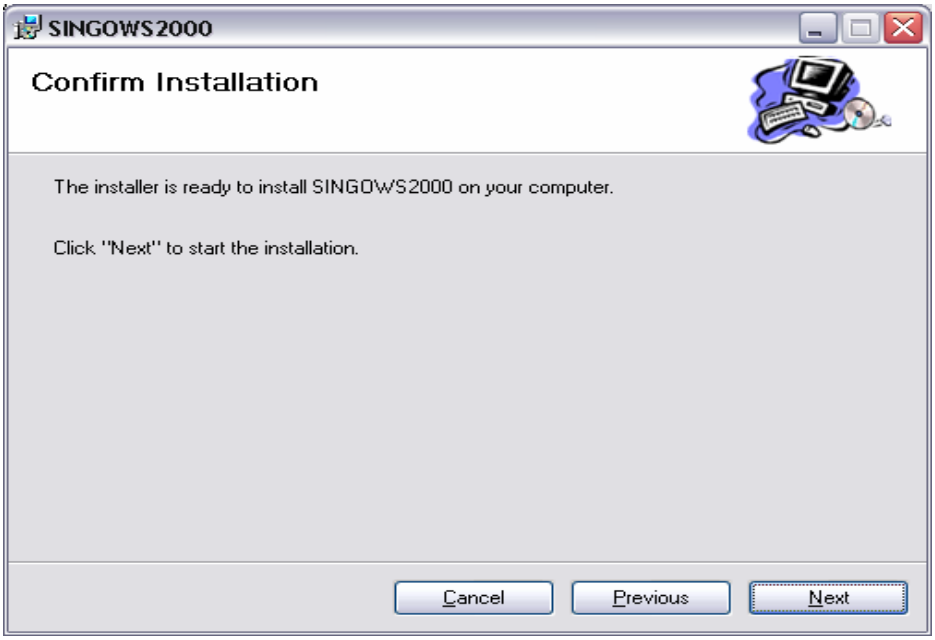


The Install Wizard appears,ready to begin the install process.
Click the next button.

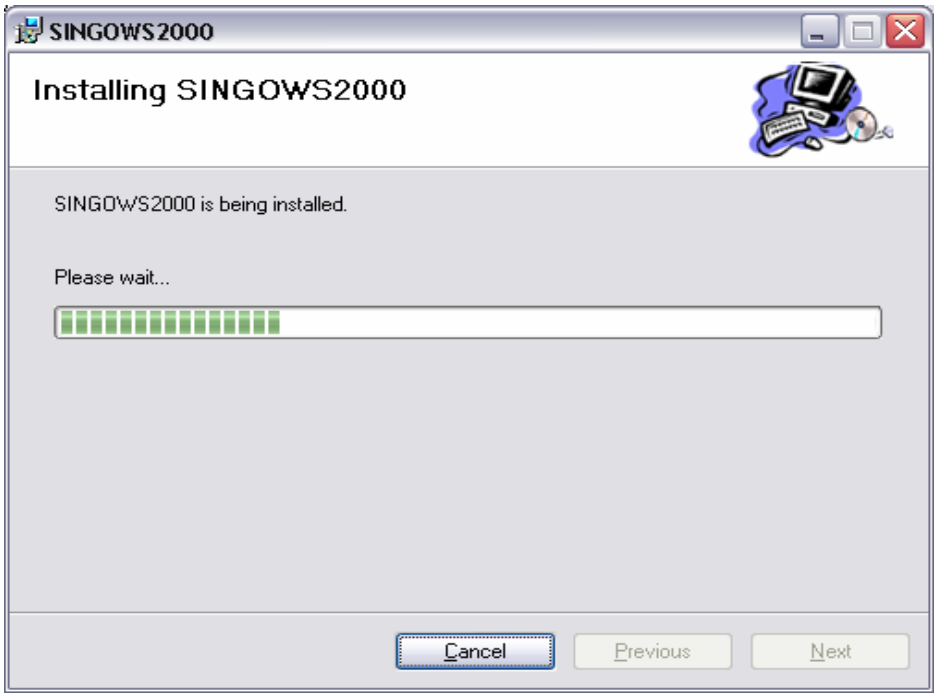
The Select Installation Folder dialog box appears.
Navigate to the location where you stored the software files.
Click the next button.



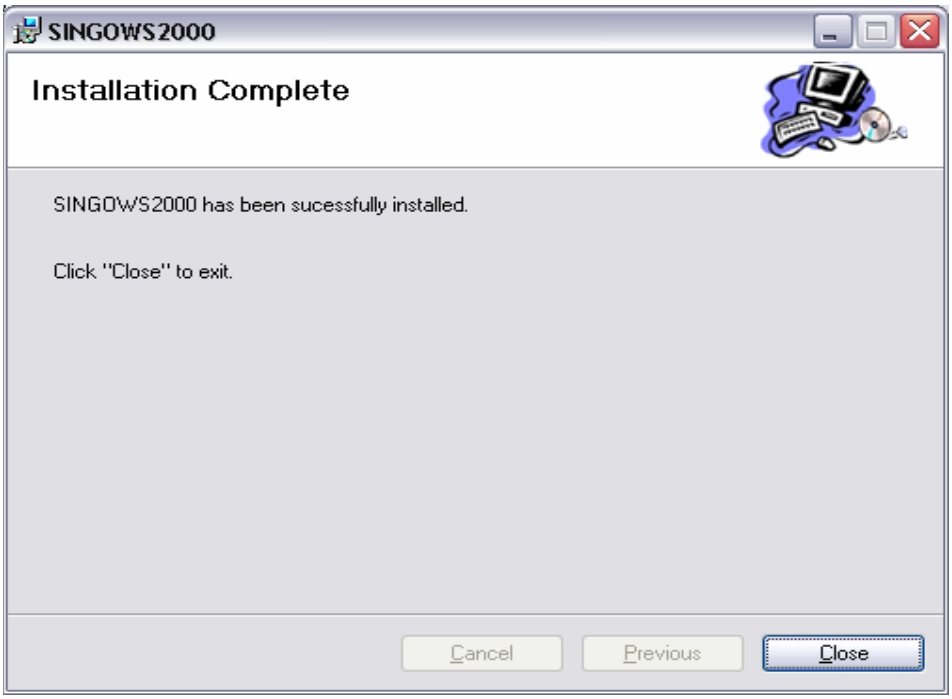
The confirm Installation dialog box appears.
Click the next button.



The Installing software dialog box appears.

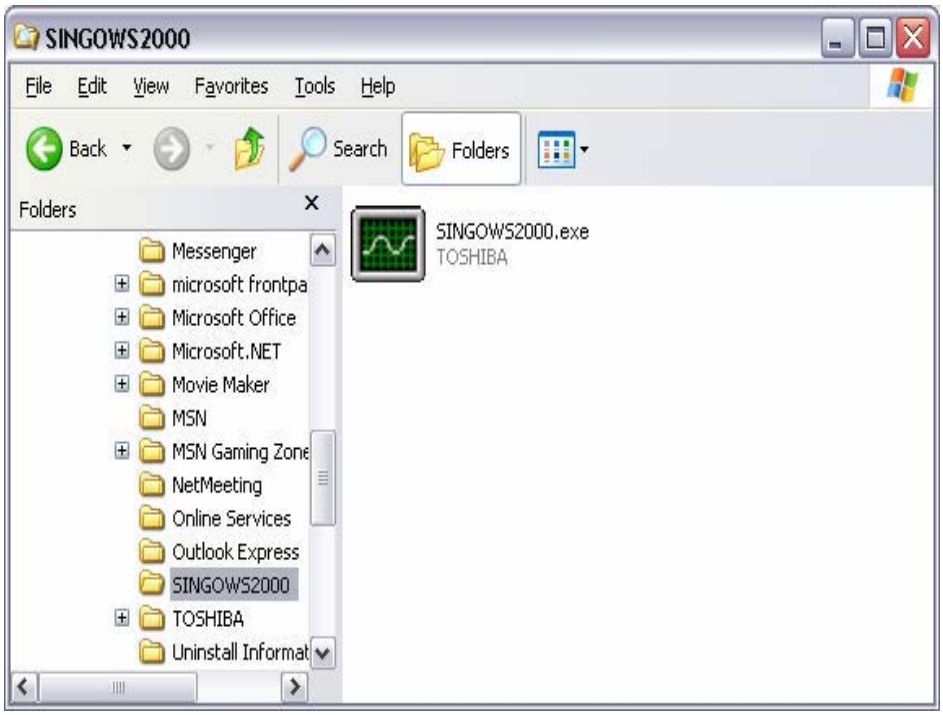


The Installation Complete dialog box appears.
Click the close button.

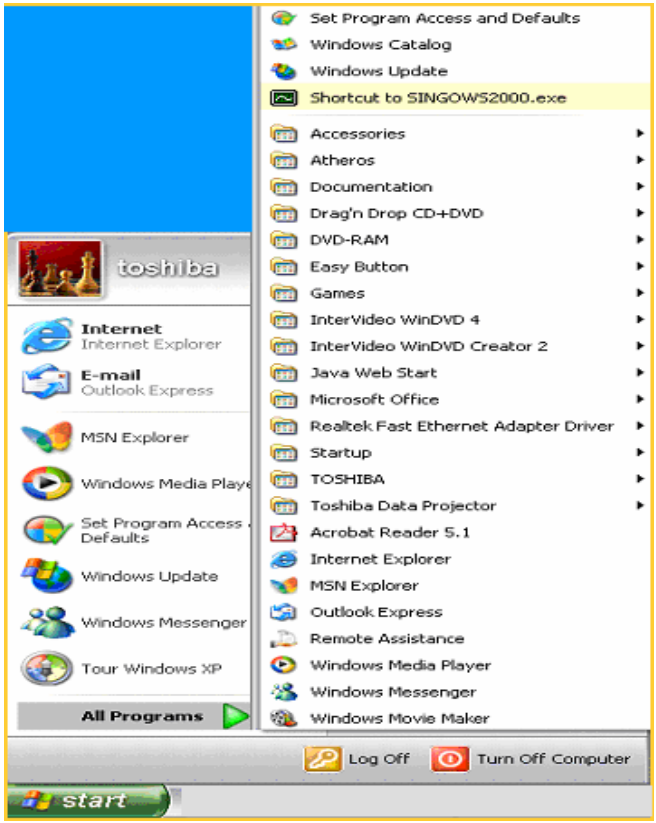


Startup the Software

Open Windows Exploler, navigate to the location where you stored the files, Then double click the **SINGOWS2000.EXE**.



Moreover, even if it chooses the shortcut of the All programs of start, it can startup.

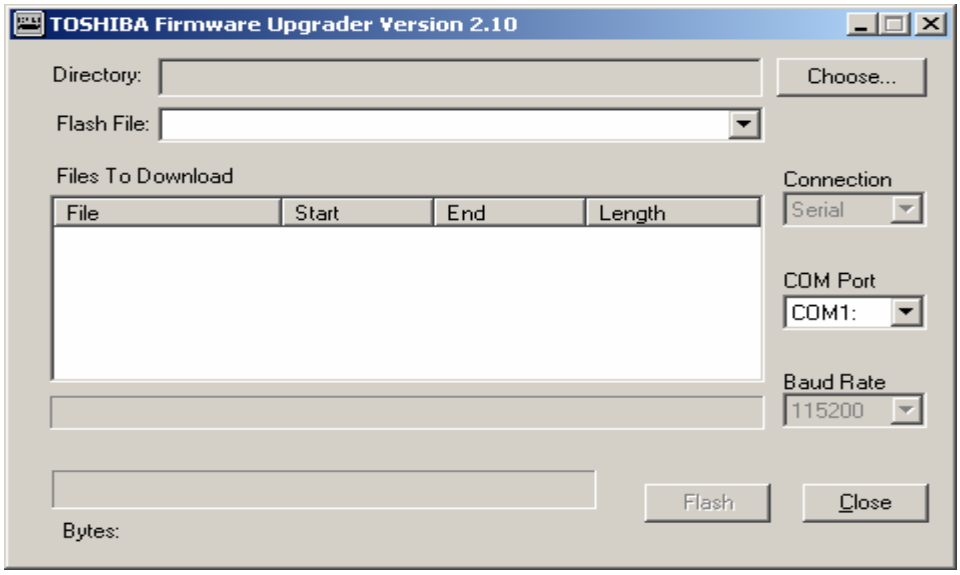


Firmware Upgrade

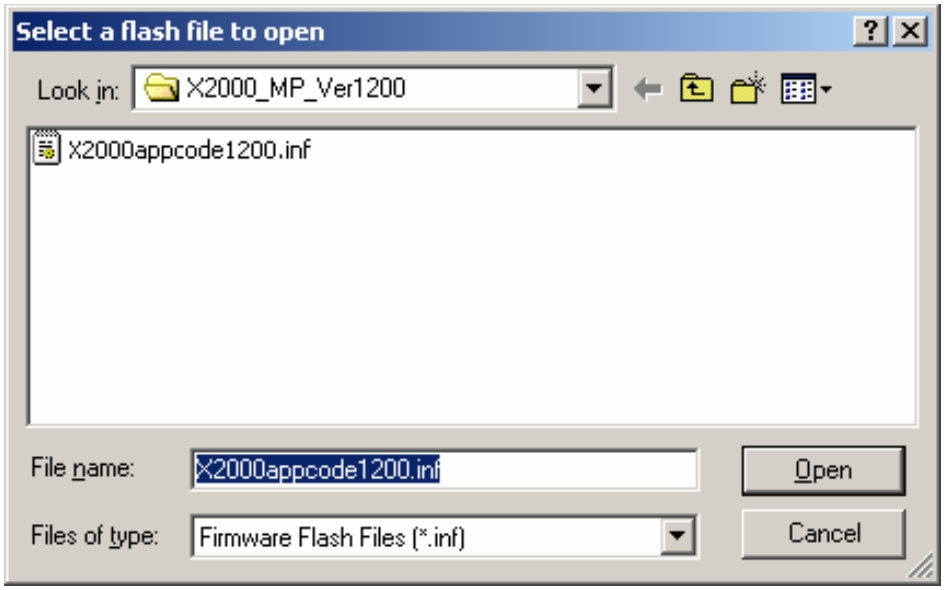
Upgrade the software

Connect the control cable to the control terminal on the projector.
Then plug the RS232C connector on the other end of the cable into a RS232C port on the computer.
Open Windows Explorer navigate to the location where you stored the upgrade files, and then double click the **Firmware Upgrader.exe**.

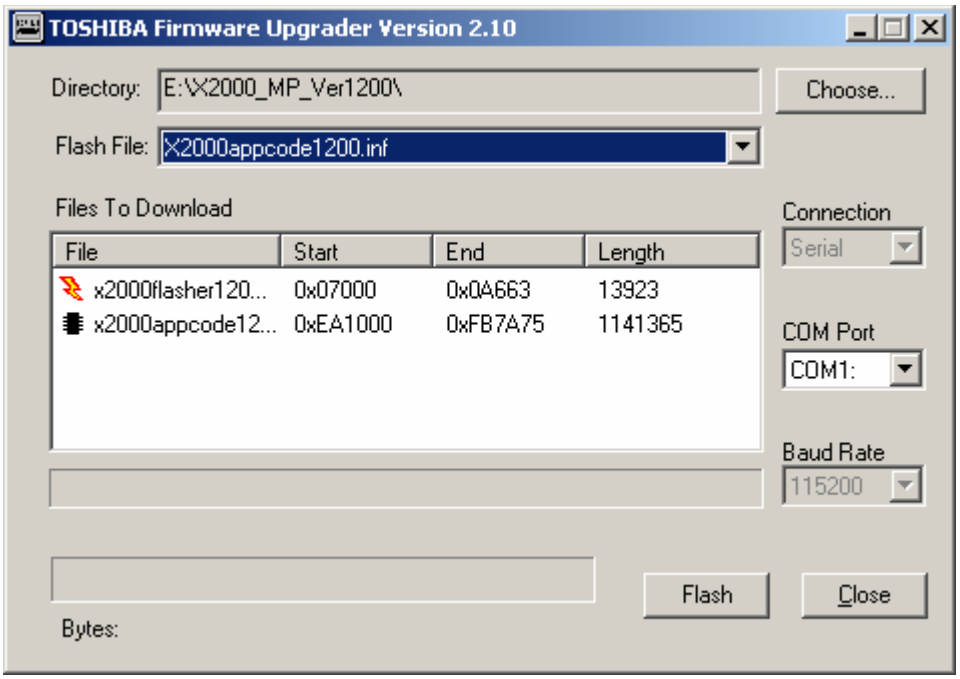
The Upgrade Wizard appears. Click the **Choose** button to open the Select File Dialog box.



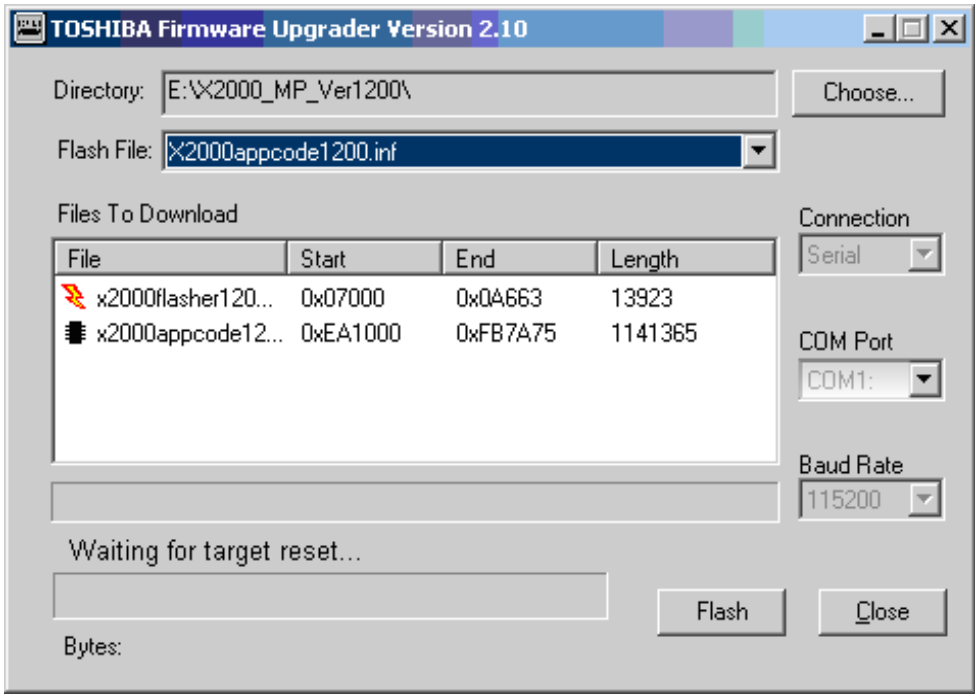
In the Open File dialog box, select the **.inf** file, and then click **Open** button.



The upgrade file appears in the Select File box.
Select the COM port.

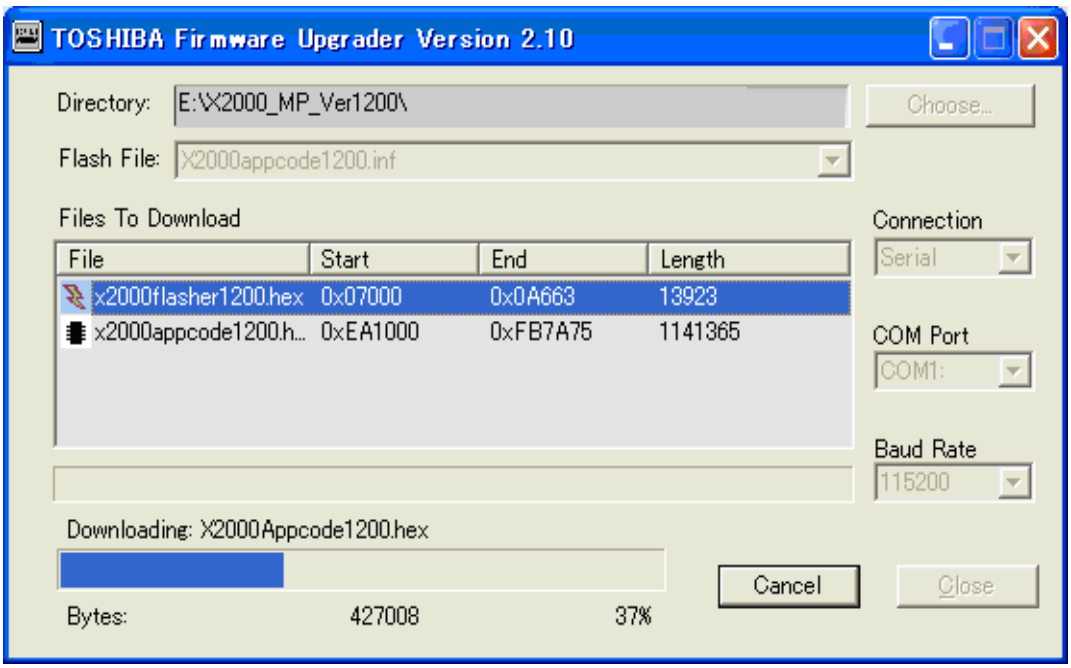


Click **Flash** button.



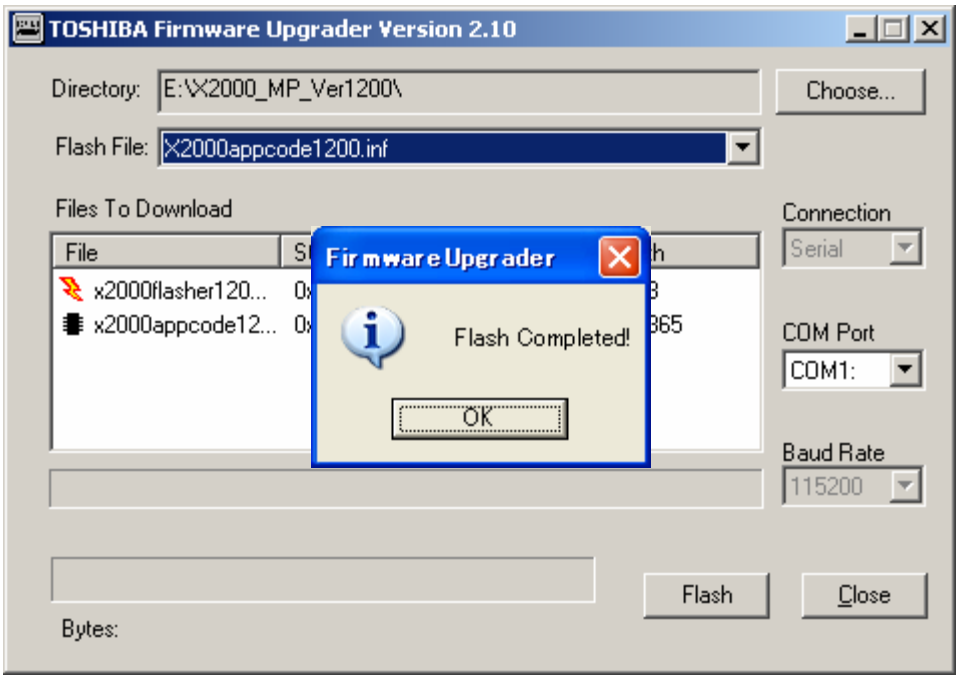
Press and hold the projector' s**[Input]** and **[Keystone]** keys, and then plug in the power cord.

The projector starts the Firmware upgrade,
[LAMP], **[ON/Standby]** and **[TEMP]** LED' s are RED blinking.



The computer begins downloading the upgrade files to the projector.
The process may take several minutes.

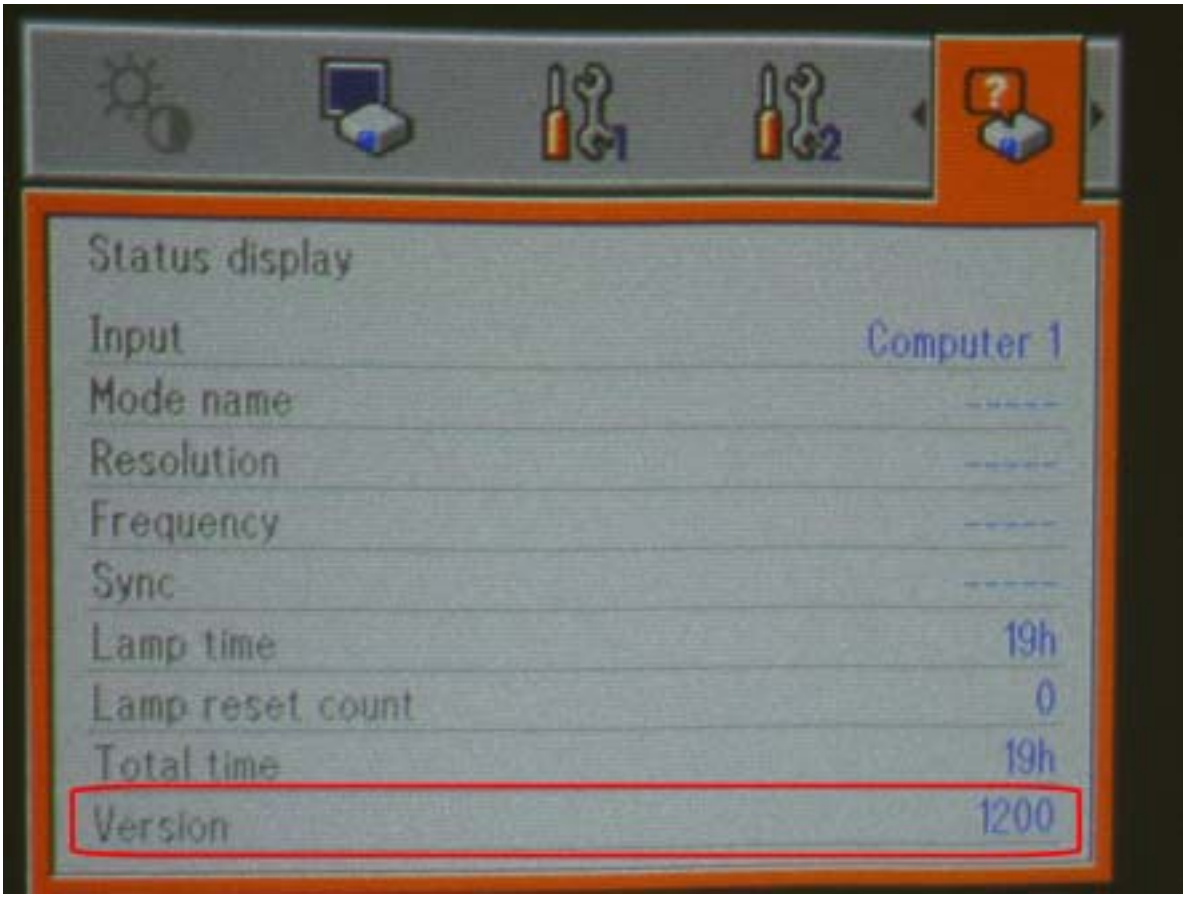
When the upgrade finishes normally, the following dialog box appears.



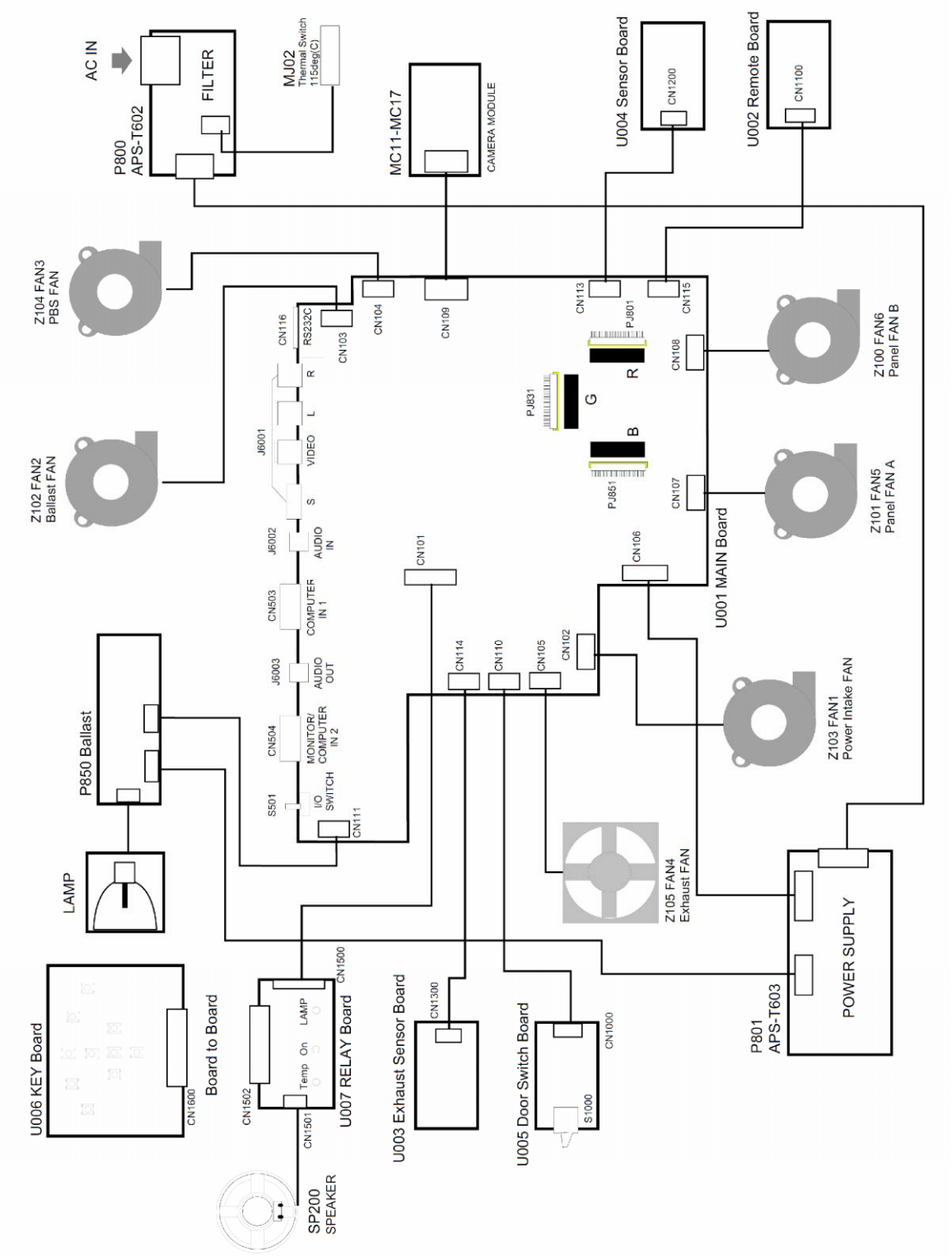
Click the **Close** button.
The upgrade is complete.

Confirm the software upgrade

1. Power up the projector.
2. On the projector keypad, press the MENU key to display the menus.
3. Press button Right or Left arrow to highlight Setting display.
4. The Setting display dialog box display the software version.
   These should match the upgrade version you downloaded.

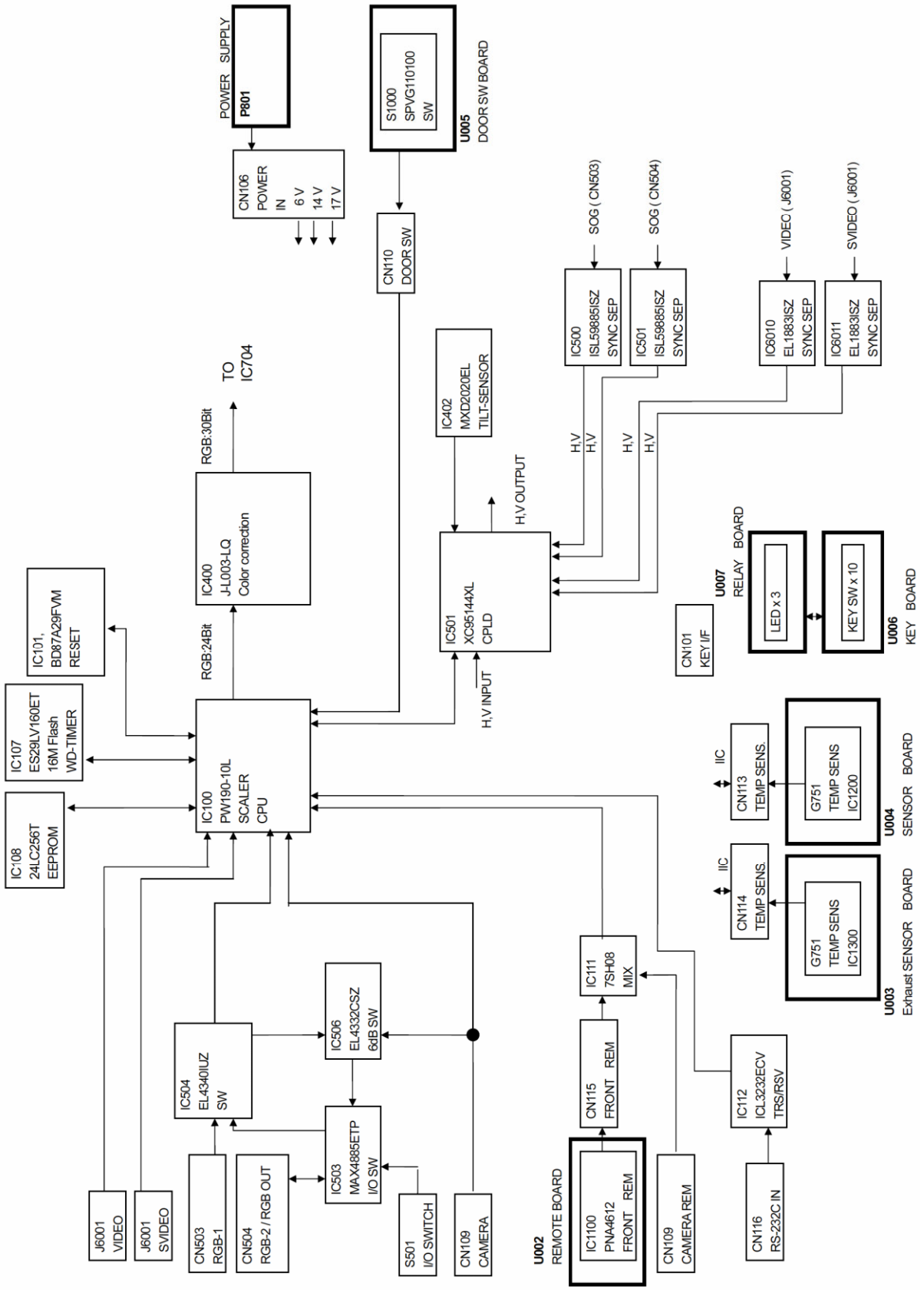


Wiring Diagram

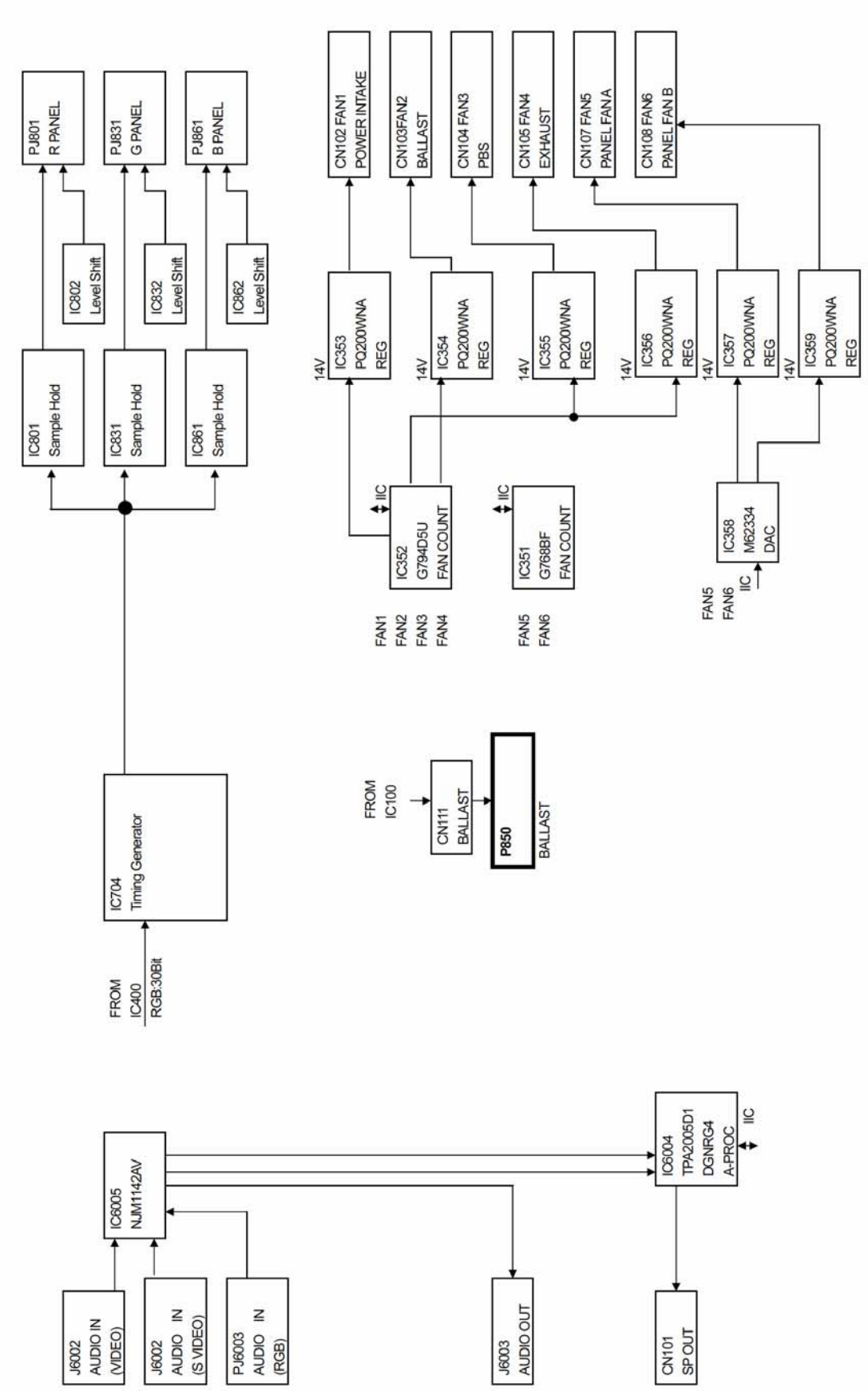


Block Diagram

BLOCK DIAGRAM 1/2



Block Diagram 2/2



LED Display

LED Display (Problems Shown on LED Indicator Combination)

Error Code No.	Status of Indicator Lights	Trouble and Cause	Solution
-	L O T	**[Standby power is not on]** -> There's a problem with the power supply or the MAIN Board.	Check the power supply. Check the connector. Check the MAIN Board.
1	L O T	**[Lamp error]** Lamp went out during use,or won't come on. -> Lamp temperature is high or the lifetime of the lamp has ended or the projector is malfunctioning.	Unplug the power cord and wait for a short while, then turn the power back on. If the lamp burns out, replace it with a new one. Or it may have a trouble at ballast power supply. Or it may have a trouble at color wheel sensor or color wheel ribbon cable or MAIN Board.
2	L (ORANGE flashing) O T	**[Lamp cover error]** Power went out during use, or power won't come on. -> The lamp cover is not properly attached.	Unplug the power cord and reattach the lamp cover.
4 9	L O T (GREEN flashing)	**[Fan error]** Power went out during use. -> Problem with internal cooling fan or IC358(M62334), IC352(G794) and IC351(G768BF) don't reply to I2C commands or the MAIN Board does not read revolving pulse. <Error code> Distinction of "GREEN flashing" number of times 04:FAN1 Power Intake Fan (1time repeat) 05:FAN2 Ballast Fan (2times repeat) 06:FAN3 PBS Fan (3times repeat) 07:FAN4 Exhaust Fan (4times repeat) 08:FAN5 PANEL Fan A (5times repeat) 09:FAN6 PANEL Fan B (6times repeat)	Check the each cooling Fan. Check the MAIN Board.
10 15	L O T (RED flashing)	**[Temperature error]** Power went out during use. -> Internal overheating, or the outside temperature is too high or temperature sensor doesn't reply to I2C commands. <Error code> Distinction of "RED flashing" number of times 10:Intake temperature sensor (1time repeat) 11:Exhaust temperature sensor (2times repeat) 12:Temperature 3 (3times repeat) 13:Temperature 4 (4times repeat) 14:Temperature 5 (5times repeat) 15:Temperature 6 (6times repeat)	Place the projector so that the air intake and exhaust are not blocked. Unplug the power cord and wait for a short while, then turn the power back on. Check the each temperature sensor.
16	L O T	**[Device error]** Power went out during use. -> There are problems with the MAIN Board. <Error code> 16:NJM1141, 24LC128, G794, G768.. at MAIN Board.	Check the MAIN Board.
	L O T (ORANGE flashing)	**[CAMERA error]** Power went out during use. -> There are problems with the CAMERA Module. <Error code> 16:CAMERA Module	Check the CAMERA Module.

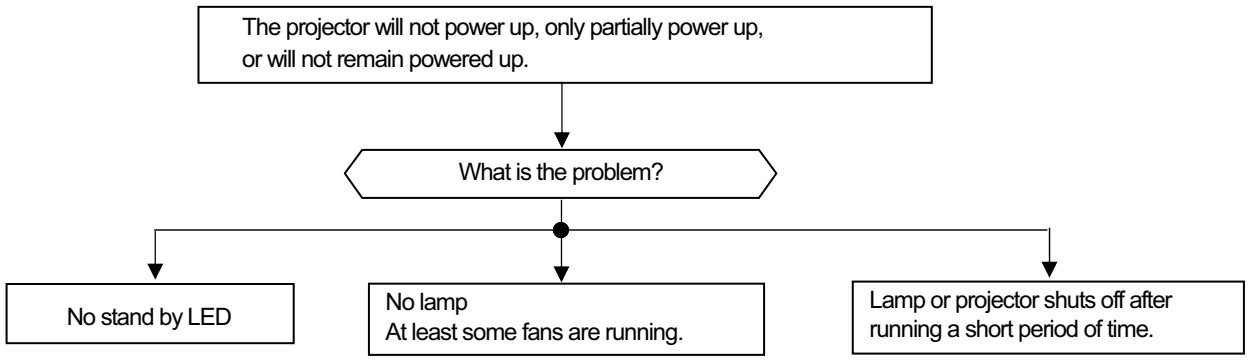
<Notes>
When each error occurs,after approx.one minute of abnormal display, the projector turns to the standby state waiting for internal cool down.
[L] : LAMP, [O] : ON, [T] : TEMP

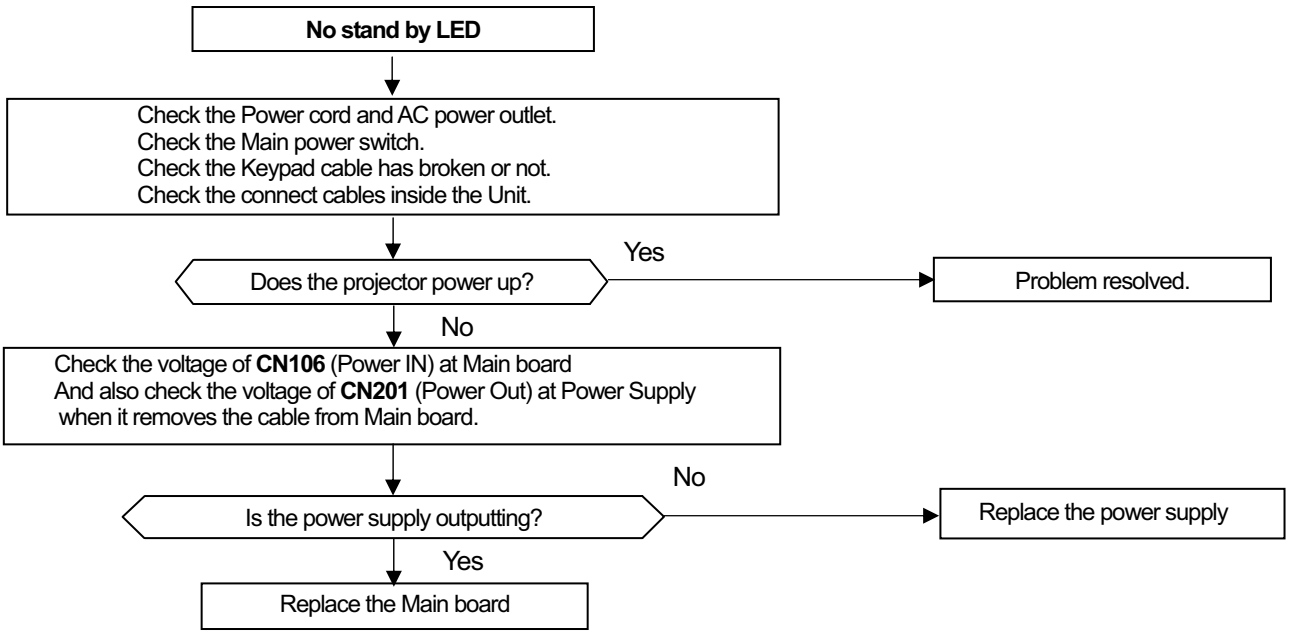
Troubleshooting

You use this section to diagnose problems with the projector. Choose the problem you are trying to diagnose from the list below. The Power, Image and Audio sections provide a variety of symptoms, while the other includes only one page.

1. For Power problems
2. For Image problems
3. For Audio problems
4. For Remote Control
5. For Keypad problems
6. For Menu problems

Troubleshooting Power Problems





No lamp

Check the error code log at service mode
When there is the error code, refer to the LED error List.
When the error code is Lamp error (No.1), remove the lamp to see if it looks good.
There should be no ruptures, no bulges, and no cracks in the reflector.
Substitute a known good lamp if you want to be absolutely certain that the lamp is not the problem.
Replace the lamp.

Check the color wheel motor cable and color wheel sensor cable are connected to the Main board.

Does lamp enable measure low?
(CN111 3PIN)

Yes

370V (DC): CN102 1PIN (RED)
(POWER SUPPLY SIDE)

No

Is 370V (DC) input
of Ballast OK?

No

Yes

Replace the ballast

Are DC power voltage levels
OK on the Main board

No

Replace the power supply

Yes

Replace the Main board

Lamp or projector shuts off after running a Short period of time.

Note:
This is usually a thermal issue caused by excessively high internal temperature.
The high temperature could cause a component on the Main board or the power supply to fail when it gets hot.

Check the error code log at service mode
When there is the error code, refer to the LED error List.

Are all fans running?

Yes

Replace the Main Board

No

Replace the broken fan.

Does the projector run property?

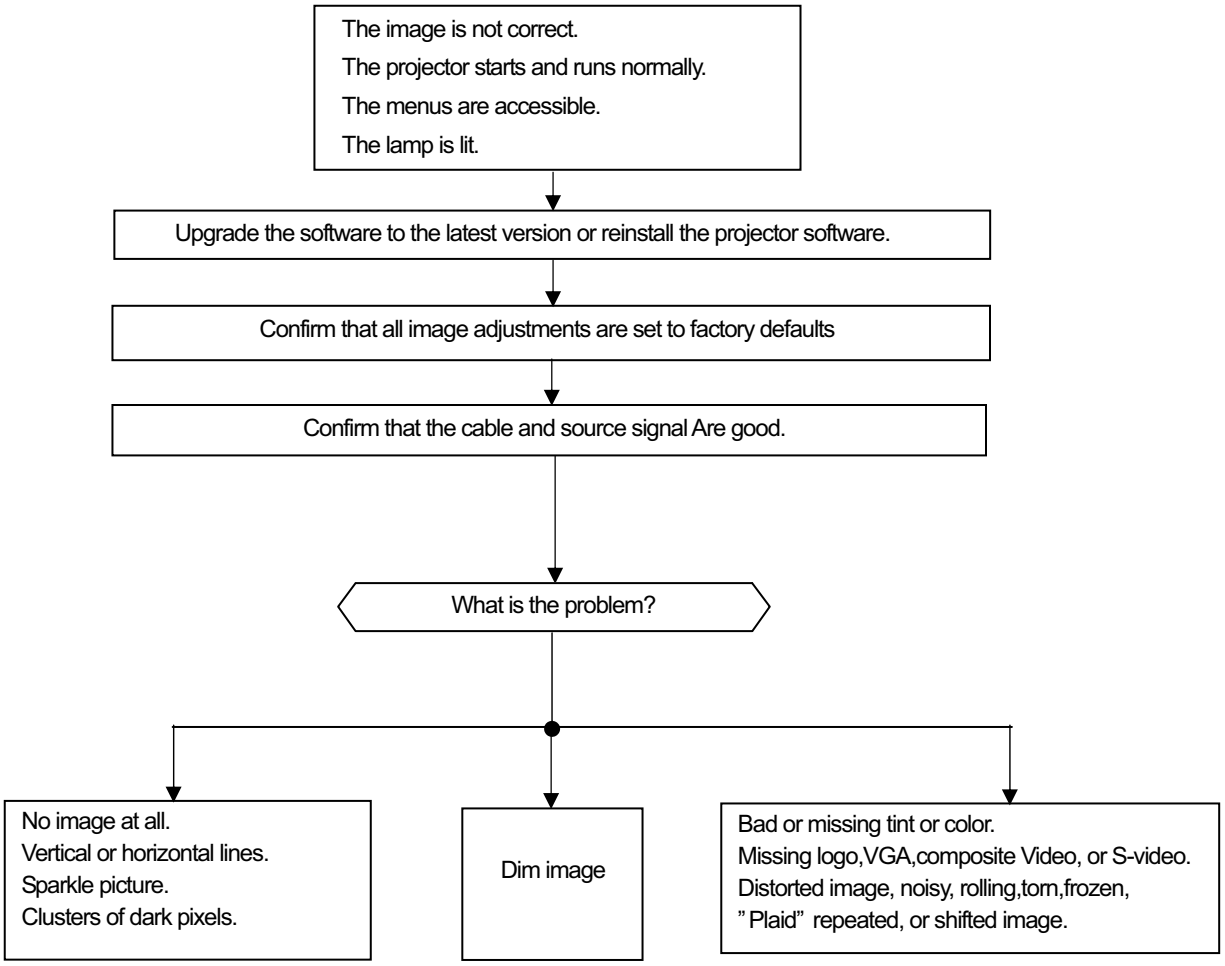
Yes

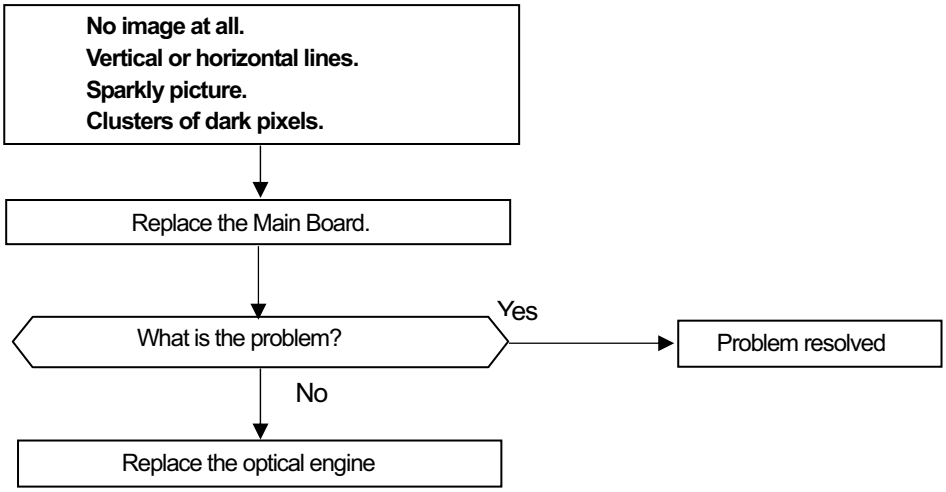
Problem resolved

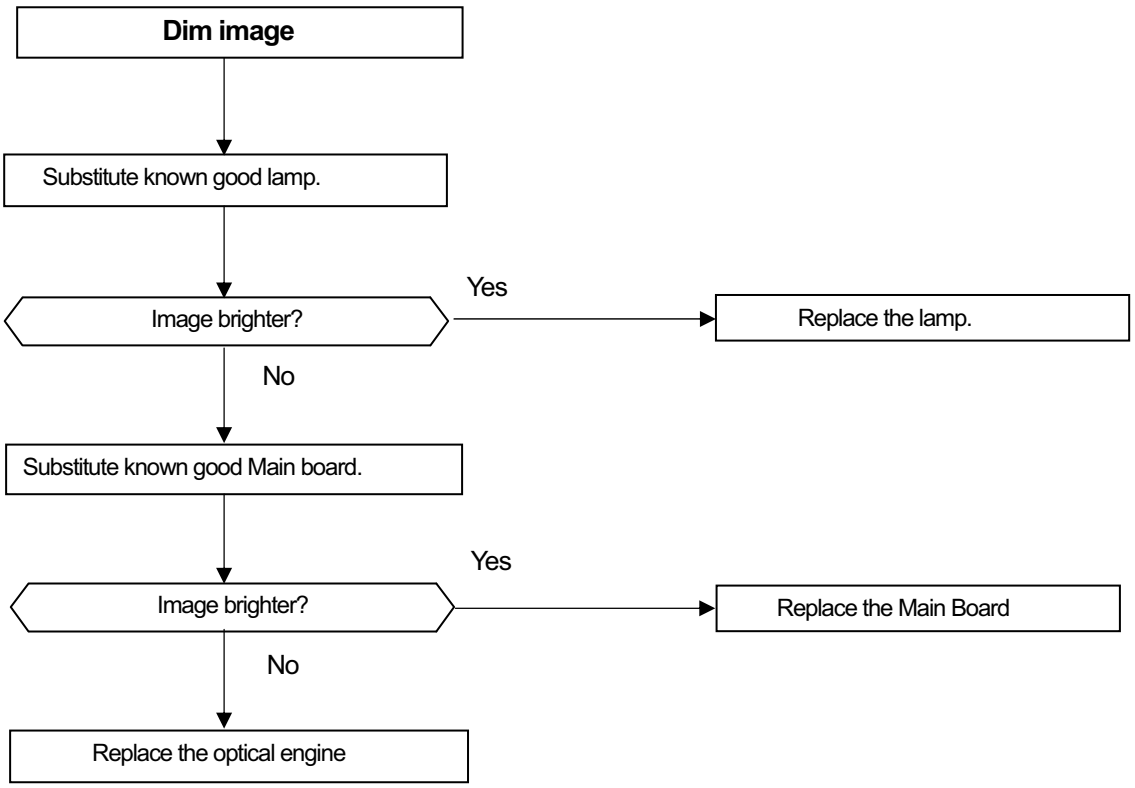
No

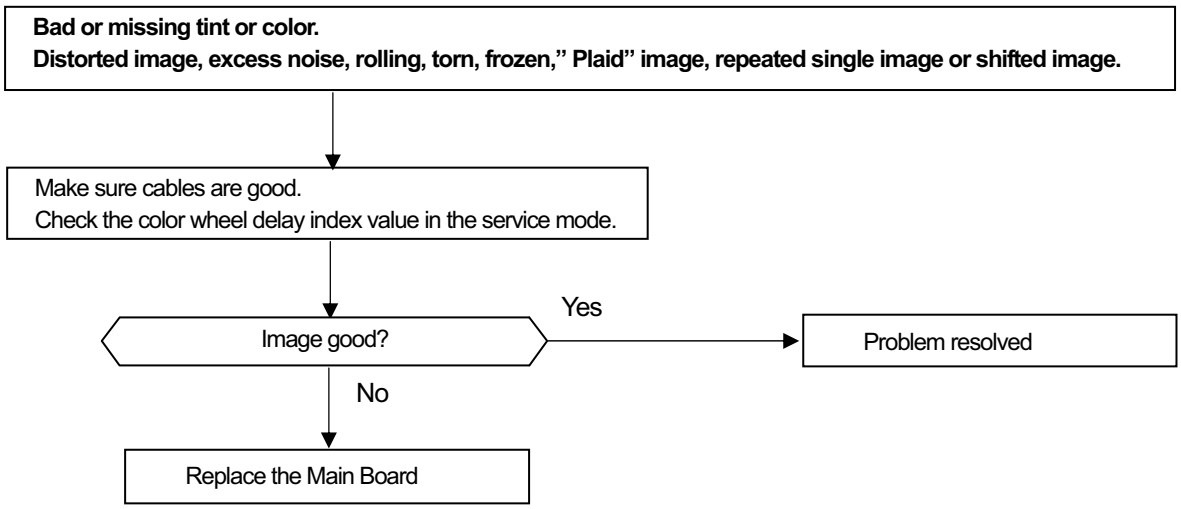
Replace the power supply

Troubleshooting Image Problems

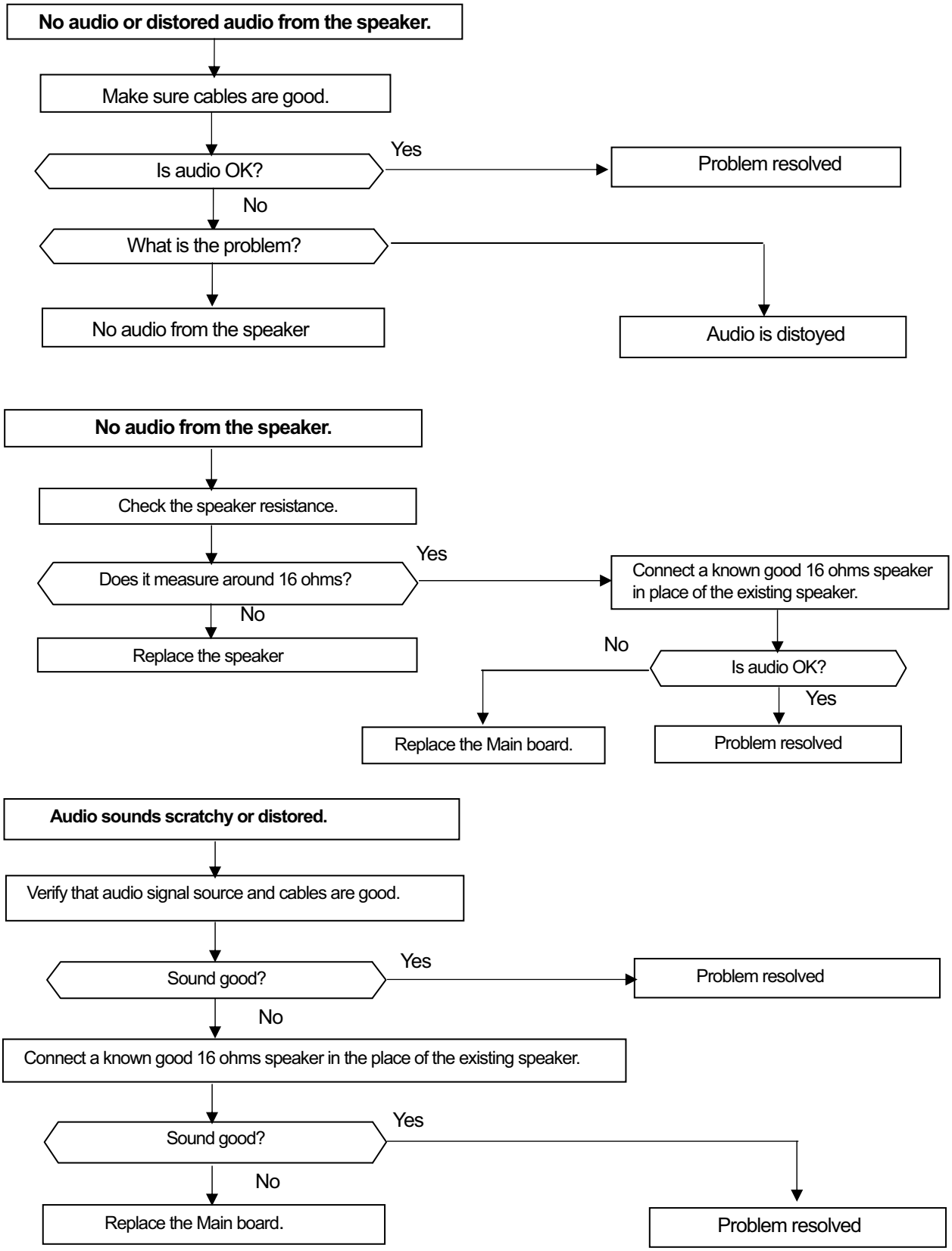




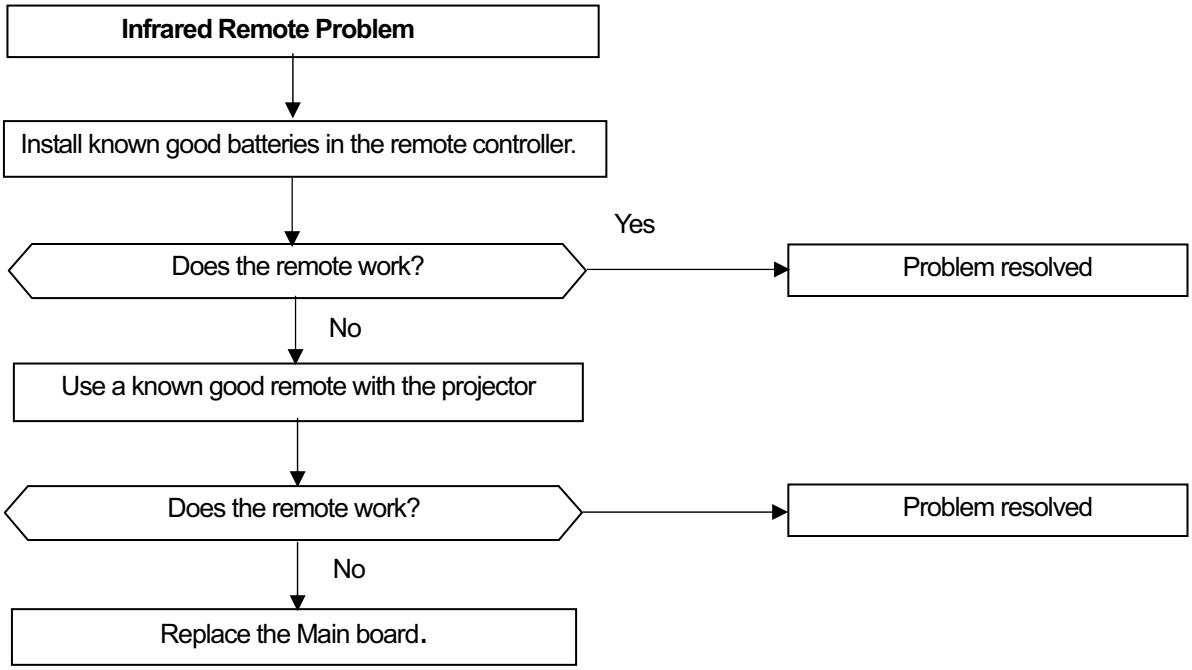

Dim image
Substitute known good lamp.
Image brighter?
Yes
Replace the lamp.
No
Substitute known good Main board.
Image brighter?
Yes
Replace the Main Board
No
Replace the optical engine


Bad or missing tint or color.
Distorted image, excess noise, rolling, torn, frozen," Plaid" image, repeated single image or shifted image.
Make sure cables are good.
Check the color wheel delay index value in the service mode.
Image good?
Yes
Problem resolved
No
Replace the Main Board

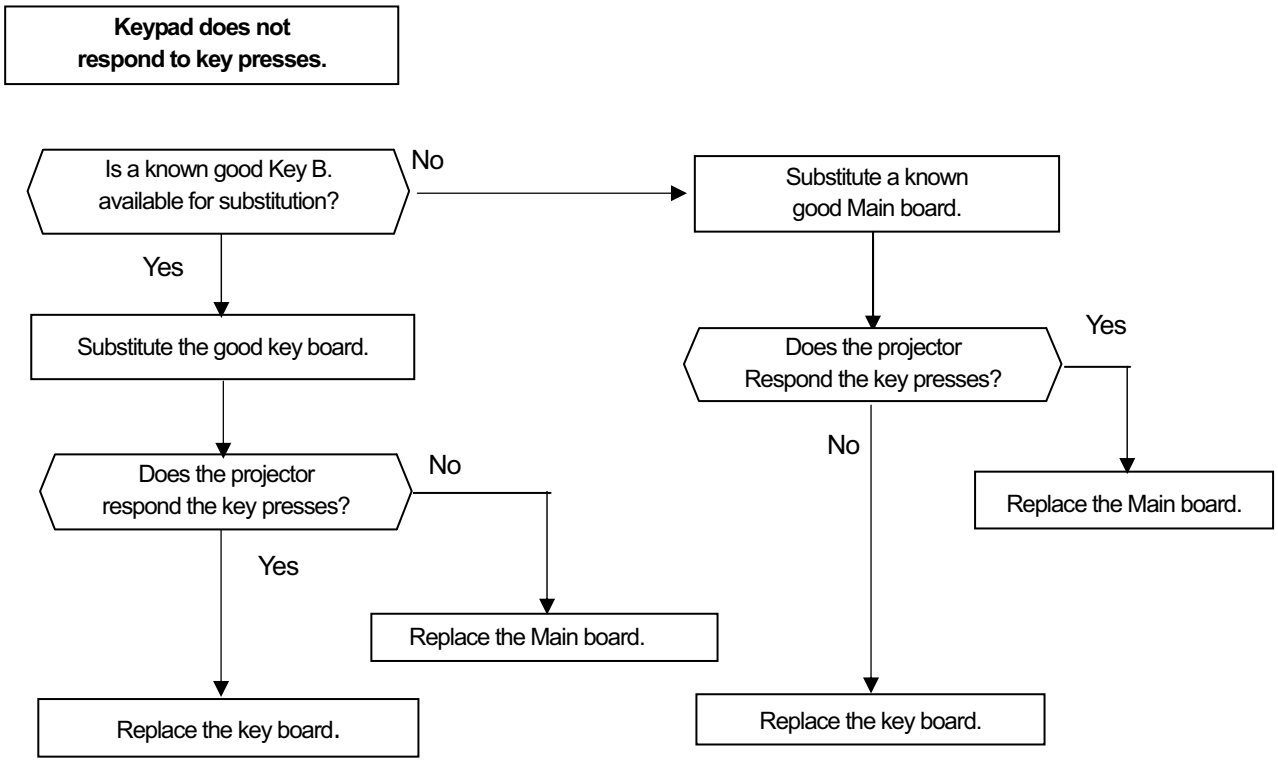
Troubleshooting Audio Problems



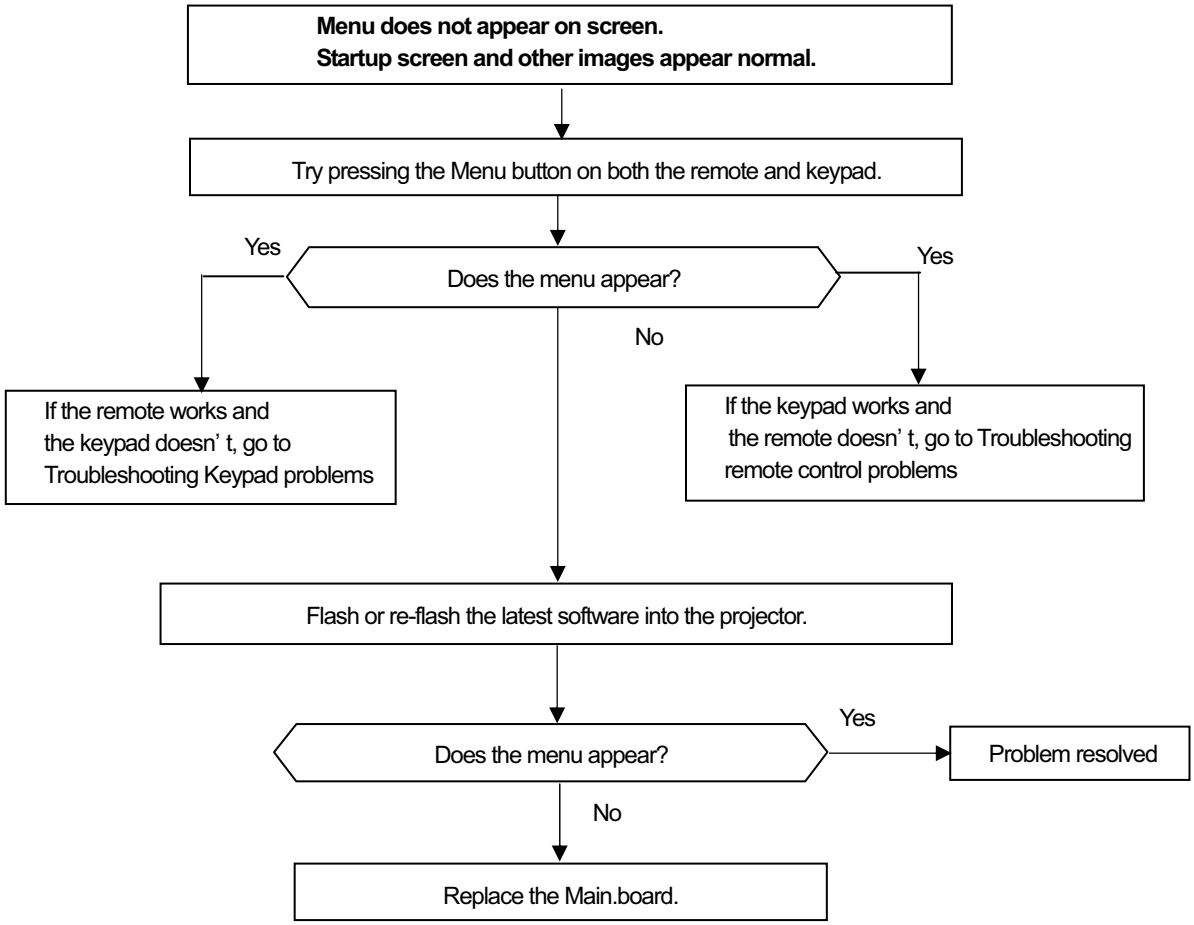
Troubleshooting Remote Controller Problems



Troubleshooting Keypad Problems



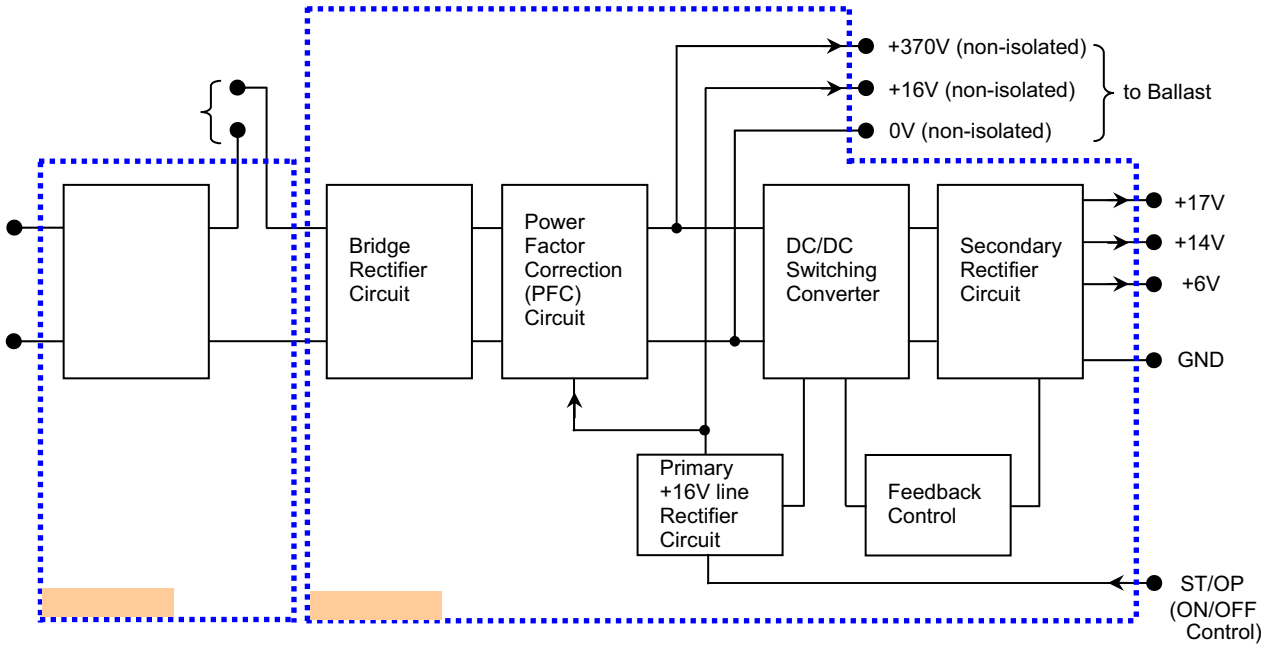
Troubleshooting Menu Problems



Operation of Power Supply (APS-M602)

OUTLINE

This power circuit APS-T60 is composed of 2 units as shown as below. (Fig.1)
APS-T602 is composed of AC inlet and input line filters mainly.
APS-T603 is composed of rectifier circuits, PFC circuit and DC/DC converter circuit mainly.
The power circuit APS-T60 is supplied 100~240Vac and it supplies 5 power sources to load circuits.
In case of the typical operation, it supplies 370V (260W max.) and 16V as Non-isolated output and supplies 3 outputs as isolated output. 3 isolated outputs are 6V, 14V and 17V.
In case of the standby mode, 16V line is turned off. And the voltage of 370V line is varied to voltagethat
rectified the AC source. 3 isolated outputs are not turned off.



OPERATION OF POWER SUPPLY

1. Transition from AC ON to Standby mode

When the AC source is supplied to this power circuit, the voltage rectified by D101 and smoothed by C105 is supplied to VH pin of IC102 through R125.
VCC pin voltage of IC102 rises by current supplied to VCC pin through VH pin.
And then, IC102 starts up and the DC/DC converter begins to operate. (6V, 14V and 17V start up.)
* This DC/DC converter is a PWM switching circuit, which is composed of IC102, T201 and Q103 mainly.

2. Transition from Standby mode to Typical Operation mode

When the level of ST/OP pin in the connector CN201 is Low or open, only the DC/DC converter is in the switching operation. Each output does not have the on/off control which works solo, except primary 16V line. The voltage level of primary 370V line becomes voltage after smoothing through bridge rectifier circuit. (e.g. Input: 100Vac, Output: approx. 140Vdc)
This status is standby mode.
When the level of ST/OP pin in the connector CN201 is High, Q105 is turned on through a photo-coupler PC103, and then the primary 16V source is supplied to the Ballast and IC101 of PFC circuit.
Because VCC voltage of IC101 reaches threshold level of starting voltage, IC101 starts up activity and the PFC circuit begins to operate. The voltage level of primary 370V line becomes approximately 370V which is stable against variation of AC input voltage.
* ST/OP pin is a pin to control for switching mode between standby and typical operation.

3. Protection against abnormal condition

If Overvoltage or overheat or overload happens, the DC/DC converter stops the switching operation by putting IC102 into the latch mode. Every output (They are primary 16V, secondary 6V, 14V and 17V.) of the DC/DC converter is turned off, and this is maintained. PFC circuit stops the switching operation because +16V line which is power source for the control IC of PFC is turned off. The voltage of 370V line varies to voltage that rectified the AC source. (i.e. The boost stops.)

About the latch mode of IC102

In normal operation, CS pin voltage of IC102 is clamped by an inside 4V zener diode.
Externally forcing CS pin voltage to increase to the threshold voltage, 8.2V, for the latch mode allows the IC102 to stop its operation for protection.
When CS pin voltage reaches to 8.2V, the inside source in IC102 is turned off, and OUT pin (for gate drive of FET in the DC/DC converter) is set to the Low level.
Then, the start-up circuit is activated again, and VCC voltage is held at approximately 22V. This status is the latch mode of IC102. The latch mode is maintained as long as supply to VCC pin continues.
It takes time for the latch mode to be rest because charged C105 voltage is applied to the VH pin even if IC102 have changed to the latch mode.
Cutting off the input voltage decreases VH pin voltage, supplying no current to the VCC pin.
Thereafter, the latch mode is reset when VCC drops below the OFF threshold level, 8V min.

OPERATION OF EACH SECTION

1. Input Line Filter

The Input line filter circuit is made up of capacitors (e.g. C1, C2, C101) and inductor chokes (e.g. L1, L2, L101) on APS-T602 unit and a part of APS-T603 unit,
This section protects the noise generated by the power supply circuit from leaking out to AC line and from entering of the external noise inside the power supply circuit.
This circuit is effective for both normal and common noise.
The fuse F1 becomes open in order to protect other parts, when excessive current flows in abnormal conditions.
The connector CN2 is connected to thermal sensing element (e.g. thermal protector). Power Supply is operated by CN2 shorted condition. In other words, when 2 terminals of CN2 become open by thermal protector, power supply to subsequent circuit is shut off.

2. Power Factor Correction Circuit (PFC circuit)

The main parts of this switching converter are choke coil T101, switching MOSFET Q101, Q102, control IC IC101 and diode D104. This circuit has mainly 4 functions as following.

a. Generate stable voltage

This PFC circuit operates so that the output always is set to 370Vdc(typ.). Actually, the switching operation of Q101 and Q102 is controlled by IC101. Initial voltage setting of 370V output is set at 370Vdc(typ.) by VR101. (Input voltage: 100Vac, maximum load)
* Please don't turn although there are 2 variable resisters for this output voltage setup and for the overvoltage protection setup. The case which needs to turn the volume means that the failure mode cannot be repaired easily.

b. Reduce input harmonic current

Main purpose of Power Factor Correction Circuit is reducing input harmonic current by bringing the input current waveform closer to a sine wave.
This circuit is CCM (Continuous Conduction Mode) PFC circuit which used resettable integrator.
The gate pulse width is adjusted per one cycle by detecting DC output voltage at the VF pin of IC101 and peak current at the ISNS pin of IC101. The amplitude and shape of the input current is controlled so as to be proportional to and in phase with the input voltage.

c. Over current protection

The current sense pin ISNS of IC101 is the input to the current sense amplifier and the overcurrent protection comparator.
There are essentially two levels of current limitation provided by the IC101. There is a "soft" current limit, which is essentially a duty cycle limiting fold back type: the converter duty cycle is limited to the point where output power is limited and the output voltage begins to decrease. There is also a "peak" current limit feature which immediately terminates the present drive pulse once the peak limit threshold, = -1.0V, is exceeded.

d. Over voltage protection

The voltage in proportion to output voltage by resistors R112, R113, R114, R115 and VR102 is added to the OVP pin of IC101. When the OVP threshold(7.49V(typ.)) is triggered, the IC101 will disable the gate drive signal.

3. DC/DC converter

The main parts of this switching converter are transformer T201, switching MOSFET Q103, control IC IC102 and output diodes D201, D202 and D203. This converter is Fly Back type.
This means that energy is transferred from the primary to secondary when MOSFET Q103 is off.
The main output is 6V line and auxiliary output is 14V and 17V line.

a. Start up

When AC input is supplied to this power supply unit, power source of IC102 is supplied through R125. And then IC102 begins switching operation and the converter starts up.
Once the converter starts up, power source of IC102 is supplied from auxiliary winding of T201.

b. Output Voltage Control

Output voltage is controlled by Pulse Width Modulation (PWM).
The voltage divided by R208, R209, R210 and R223 in the 6V line is detected, and this voltage is compared with the reference voltage of shunt regulator IC201. Photo coupler PC101 feeds back the comparison from secondary to primary. And output voltage is adjusted by the level of current drawn from the FB pin of IC102.
When 6V output voltage is above the control level, IC102 to shorten the on-time (duty cycle) of MOSFET Q103. This cause the average output to decrease. When the output is below the control level, on-time (duty cycle) is increase, thereby increasing the average output voltage.

c. Overcurrent Protection

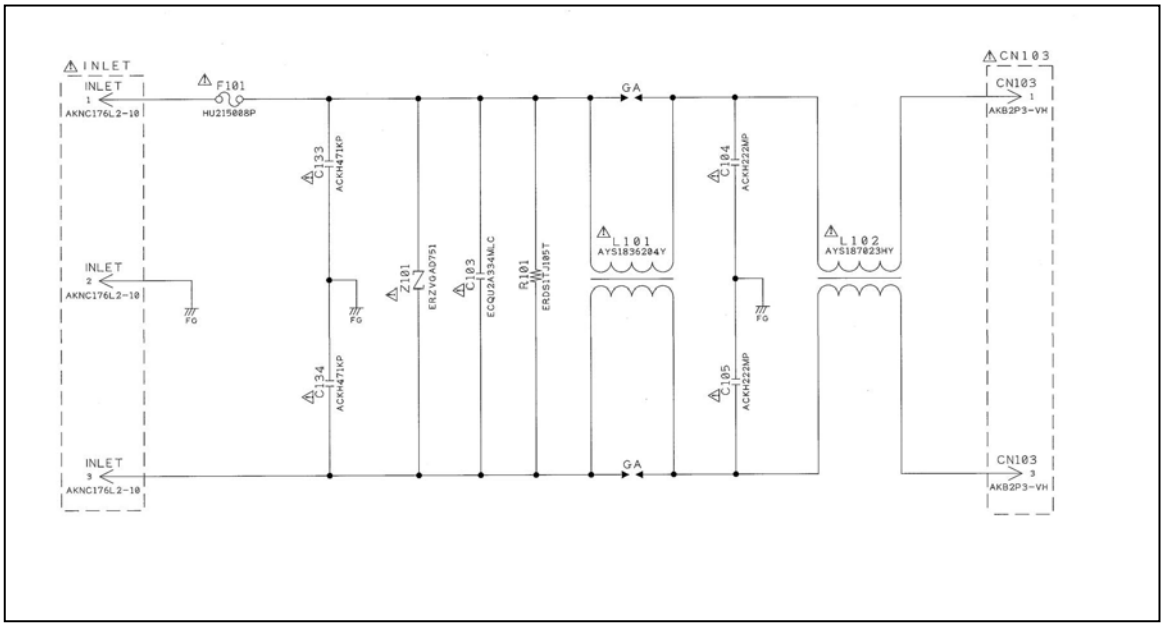
If the power supply output becomes overload, the current of MOSFET Q103 is limited by the maximum threshold voltage of the IS pin in IC102 and output voltage drops. If the state continues as it is, an overload protection function of IC102 operates to stop the IC in the latch mode.

d. Overvoltage Protection

Overvoltage state is detected when output voltage exceeds the zener voltage of zener diode (ZD201, ZD202, ZD203). When zener diode is in conduction state, through the photo coupler PC102, the CS pin voltage of IC102 is increased forcibly to the threshold level for the latch mode. And power supply is shut down.

e. Overheat Protection

The abnormality of heat sink temperature of Q101, Q102 and Q103 is detected by PTC thermistor PR101. Through the diode D113, the CS pin voltage of IC102 is increased forcibly to the threshold level for the latch mode and power supply is shut down. It operates at the time of abnormal state such as overload or FAN-Locked.


INLET
INLET
1
AKNC176L2-10
F101
HU21500BP
C133
ACKH471KP
Z101
ERZV0A0751
C103
ECQU2A334ML.C
R101
ERDS1TJ105T
GA
L101
AYS1836204Y
C104
ACKH222MP
L102
AYS187023HY
CN103
CN103
1
AKB2P3-VH
INLET
2
AKNC176L2-10
FG
C134
ACKH471KP
C105
ACKH222MP
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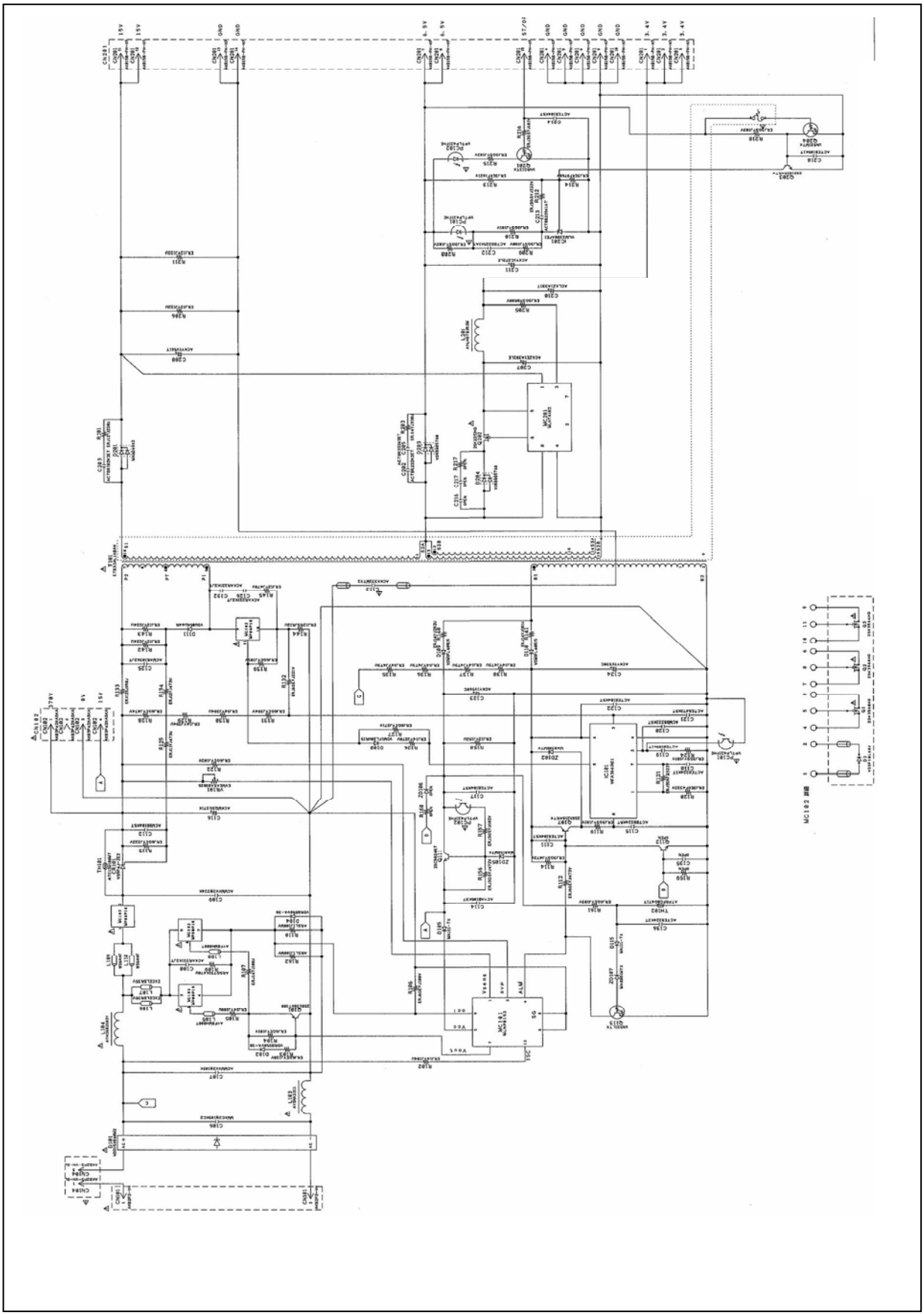
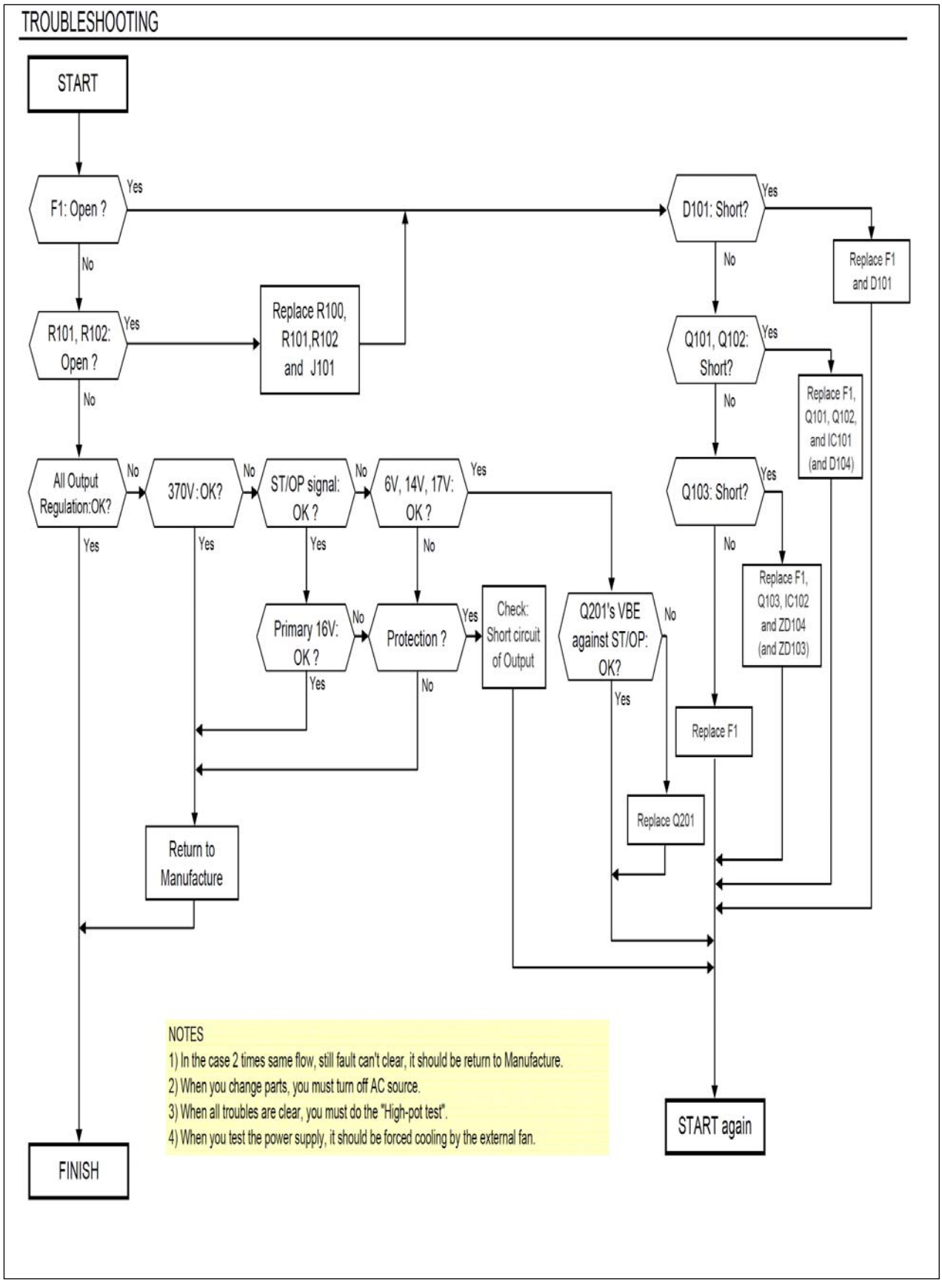
GA
CN103
3
AKB2P3-VH



APS-M602 (ETXTS602MDA/MDE) Troubleshooting Faults



Electrical Adjustment

Preparation

< Test equipment >

1) Personal computer
   (Windows PC, OS: Windows 98SE, ME, 2000, XP)
2) Signal generating software
   SINGOWS2000.MSI (Installer)
3) Adjustment software
   DPJAdjustmentTool_2500.exe
4) Cables
   RGB Cable and Control (RS232C) Cable
5) A protractor for Vertical Auto Keystone Calibration

<For connection and setting of Personal computer>

1) Connection of personal computer
   Connect the PC to computer 1 input and RS232C terminal as shown in following Fig.1
2) Set the screen resolution and refresh rate to XGA (1024x768) 60Hertz.
   Set RGB output of the PC to CRT.

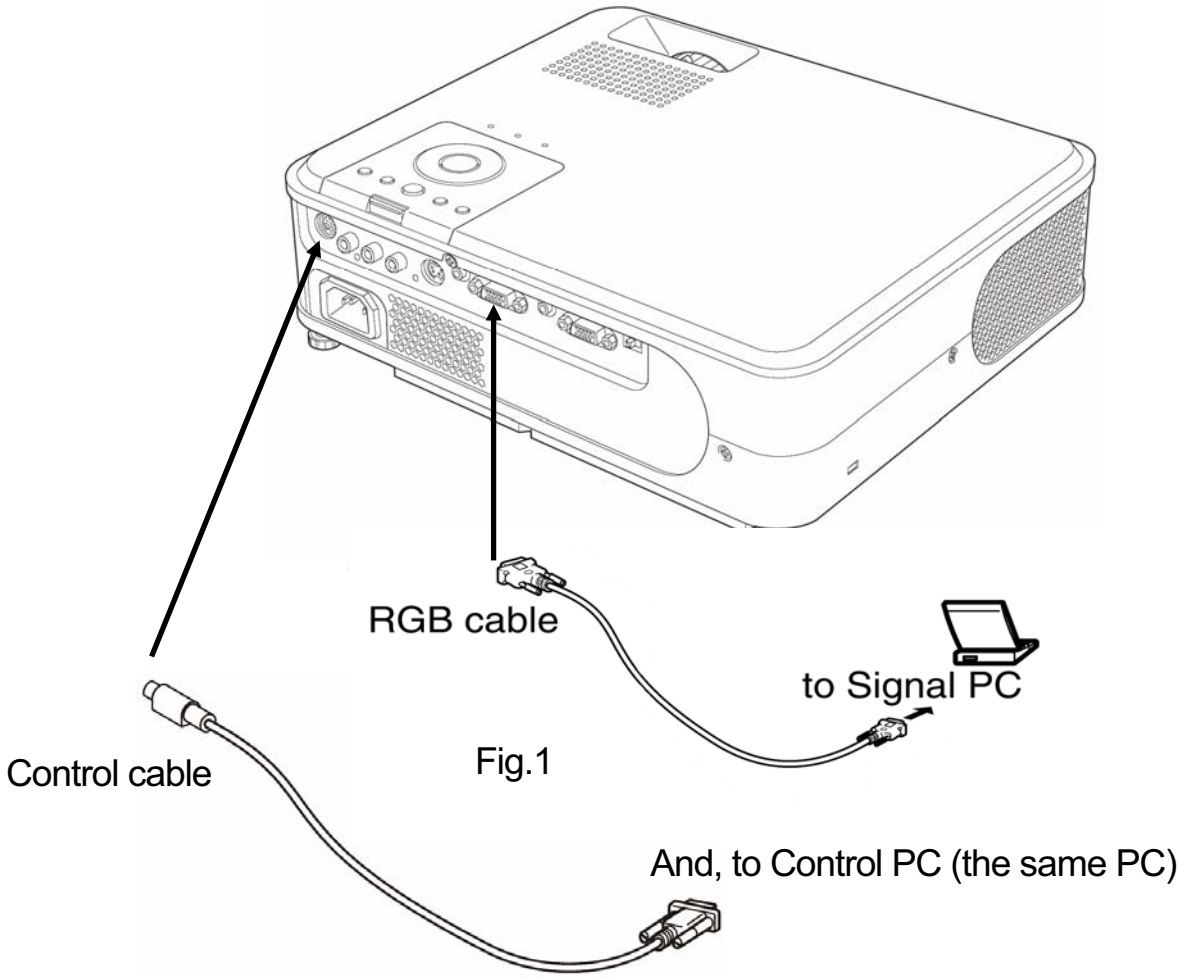


Fig.1

Adjustment Points vs Part Replaced

The table below shows you the items to be adjusted according to the type of part you replaced.

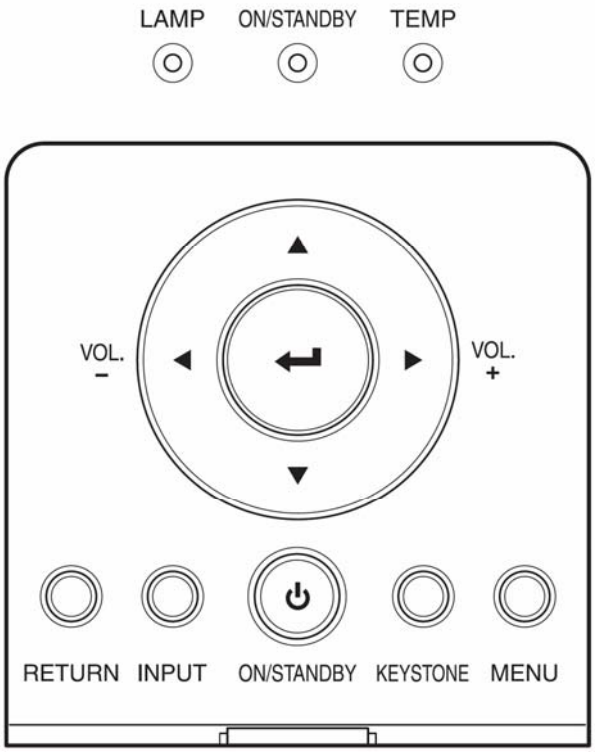
Adjustment / Parts	Keystone	Sub Contrast	Altitude	Pixel (Convergence)	VCOM	Gamma	Shading
	Special Key Operations			SINGOWS 2000	DPJAdjustmentTool_2500.exe		
Main Board	○	○	○	×	○	○	○
Optical Engine	×	×	×	×	○	○	○
LCD Panel	×	×	×	○	○	○	○

○ :Adjustment is needed

× :Not necessary

<SAVE DATA to EEPROM > (Common on all adjustment)

Press the buttons,
[Up], **[Down]**, **[Left]** and **[Right]** simultaneously.
When these buttons are accepted, all LED's light orange or red blinking in order.



Projector Setup

Plug in the power cord; turn on main power switch and the power of the projector.

How to enter to the Factory Mode (TLP-X2500/XC2500/X3000/XC3000)

1) While the Volume adjustment bar is displayed on the screen, set value to **[2]**, and press the buttons, **[Input]**, **[On/Standby]** and **[Keystone]** simultaneously.

2) While the Volume adjustment bar is displayed on the screen, set value to **[0]**, and press the buttons, **[Input]**, **[On/Standby]** and **[Keystone]** simultaneously.

3) While the Volume adjustment bar is displayed on the screen, set value to **[0]**, and press the buttons, **[Input]**, **[On/Standby]** and **[Keystone]** simultaneously.

4) While the Volume adjustment bar is displayed on the screen, set value to **[0]**, and press the buttons, **[Input]**, **[On/Standby]** and **[Keystone]** simultaneously.

When the projector enters to the Service Mode, the buzzer beeps for 3 seconds.

If doesn't beep, repeat from the beginning.

This mode maintains until you turn off the main power switch.

How to display the Service status

After the projector has entered to the factory mode, press the buttons,
[Return] and **[Up]** simultaneously. Then, the following display appears.
If it doesn't appear, repeat from the beginning.
This mode maintains until you turn off the Main power switch.

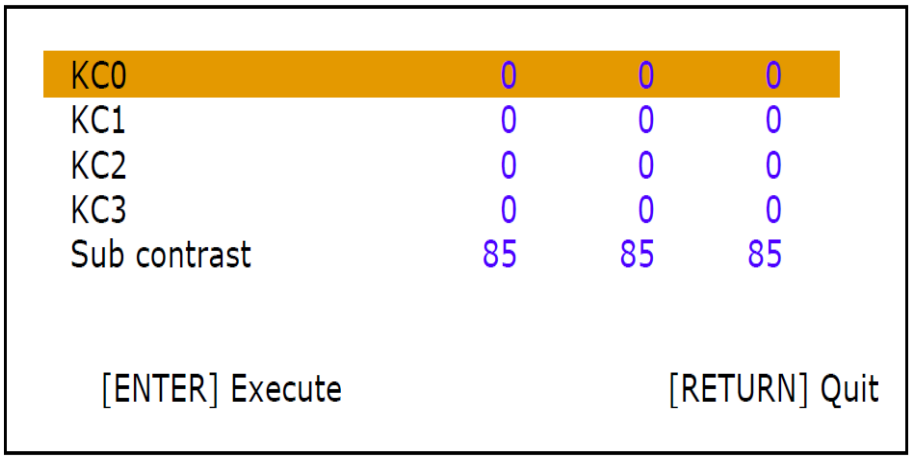
Service status (Display only) [RETURN] Quit

Version		1200	
User lamp time	1H - 10M - 10S	-> Reset count	0
Total time	1H - 10M - 10S		
LCD Panel time (R)	1H - 10M - 10S	-> Reset count	0
LCD Panel time (G)	1H - 10M - 10S	-> Reset count	0
LCD Panel time (B)	1H - 10M - 10S	-> Reset count	0
Polarizer time (R)	1H - 10M - 10S	-> Reset count	0
Polarizer time (G)	1H - 10M - 10S	-> Reset count	0
Polarizer time (B)	1H - 10M - 10S	-> Reset count	0
KC0 28 - 4786 - 2423		KC1 27 - 4799 - 2664	
KC2 27 - 4809 - 2005		KC3 26 - 4331 - 2440	
Sub contrast (Com1) 46 - 38 - 46		Sub contrast (Com2) 51 - 42 - 51	
Fan-1 2978rpm	Fan-2 3840rpm	Fan-3 5342rpm	
Fan-4 2730rpm	Fan-5 5522rpm	Fan-6 5342rpm	
Temp-1 25deg	Temp-2 59deg	Temp-3 49deg	
Temp-4 49deg	Temp-5 43deg	Temp-6 46deg	
Engine No.	000AAA00000A-R	Altitude	0
Error count	0	Shut down	0
Error log	0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0 - 0		
Serial No. 63731126		Model name	XC2500
[Total time] display	Enable	[Password] function	Enable
[Lamp Msg] display	Enable	[Filter Msg] display	Enable

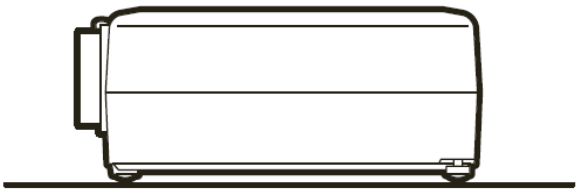
FAN-1 is Z103 (Service part location No.). **FAN-2** is Z102.
FAN-3 is Z104. **FAN-4** is Z105. **FAN-5** is Z101. **FAN-6** is Z100.
Temp-1 is Intake temperature. **Temp-2** is Exhaust temperature.
A number of **Error log** means an error ID.

<Keystone Calibration>

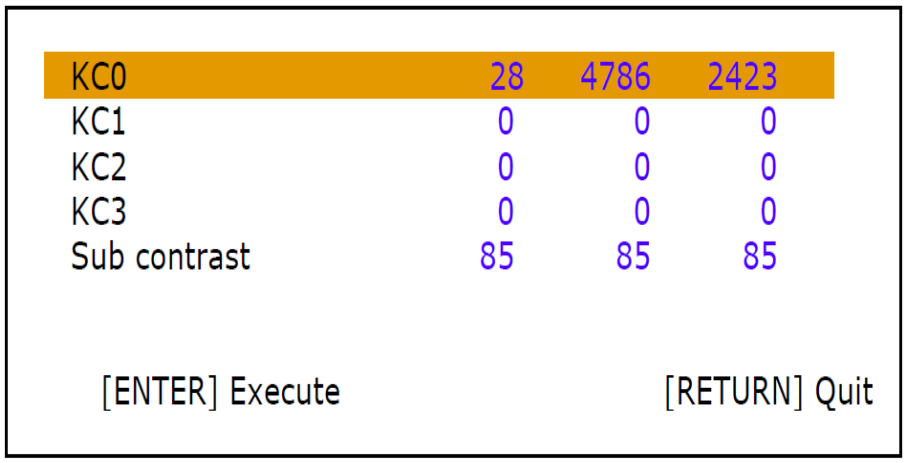
Press **[Input]** and **[Up]** buttons simultaneously.
For it initialize the value, Press **[Keystone]** button.



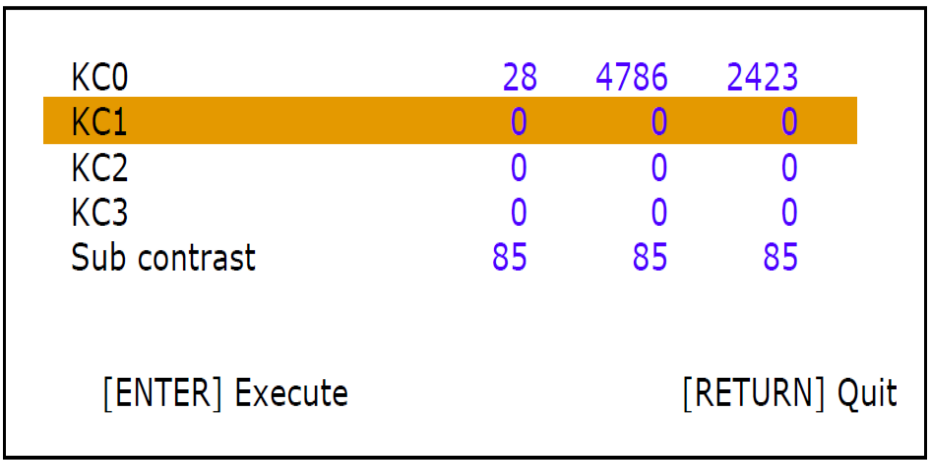
Set the projector on a level surface.



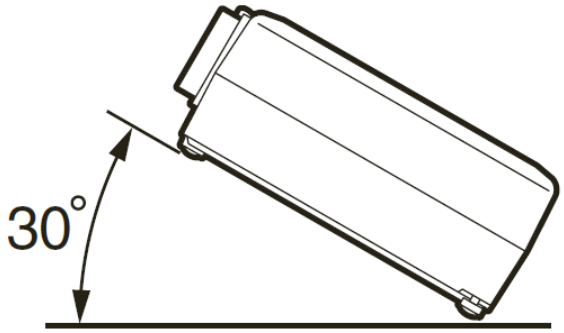
Press **[Enter]** button of the projector.
When the adjustment is successfully completed, values changes from default [0].
(**Example:** The following menu)
If it fails, values don't change from default [0].



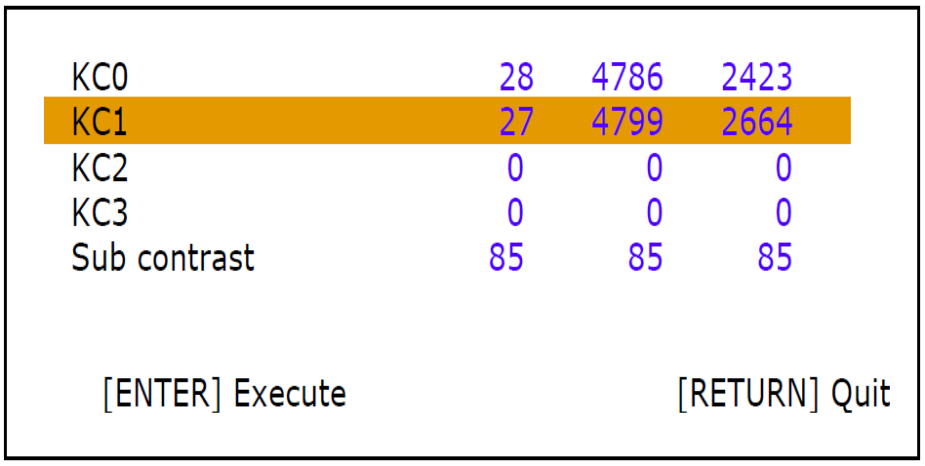
Select the **KC1** item by pressing **[Down]** button.



Keep projector on 30 degree.



Press **[Enter]** button of the projector.
When the adjustment is successfully completed, values changes from default [0].
(Example: The following menu)
If it fails, values don't change from default [0].

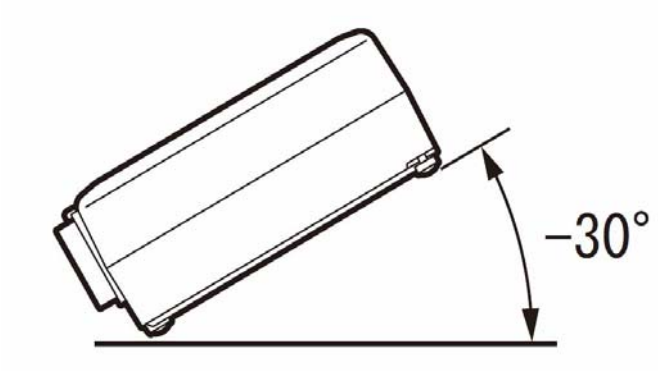


Select the **KC2** item by pressing **[Down]** button.

KC0	28	4786	2423
KC1	27	4799	2664
KC2	0	0	0
KC3	0	0	0
Sub contrast	85	85	85

[ENTER] Execute [RETURN] Quit

Keep projector on -30 degree



Press **[Enter]** button of the projector.
When the adjustment is successfully completed, values changes from default [0].
(Example: The following menu)
If it fails, values don't change from default [0].

KC0	28	4786	2423
KC1	27	4799	2664
KC2	27	4809	2005
KC3	0	0	0
Sub contrast	85	85	85

[ENTER] Execute [RETURN] Quit

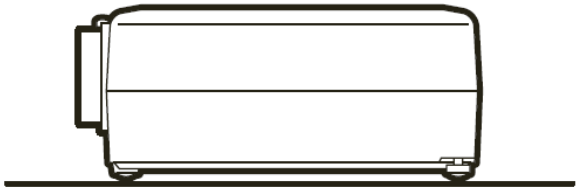
<Note> When the projector is not tilted accurately +/- 30degree,
the adjustment values (**[KC1]** and **[KC2]**) do not change.

Select the **KC3** item by pressing **[Down]** button.

KC0	28	4786	2423
KC1	27	4799	2664
KC2	27	4809	2005
KC3	0	0	0
Sub contrast	85	85	85

[ENTER] Execute [RETURN] Quit

Set the projector on a level surface and perform heat-run for 30 minutes or more.



Press **[Enter]** button of the projector.
When the adjustment is successfully completed, values changes from default [0].
(**Example**: The following menu)

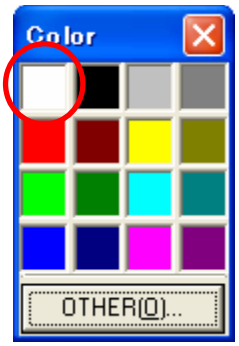
KC0	28	4786	2423
KC1	27	4799	2664
KC2	27	4809	2005
KC3	26	4331	2440
Sub contrast	85	85	85

[ENTER] Execute [RETURN] Quit

<Sub Contrast>

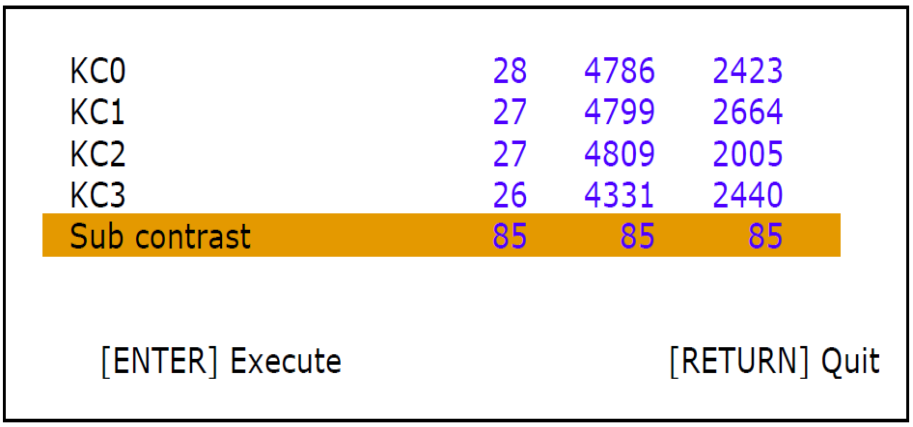
Right - click to display the following color pallets. Click **[White]** button.

Note: Move the mouse cursor out of a screen to avoid the error.



Select the Sub contrast item by pressing **[Down]** button.

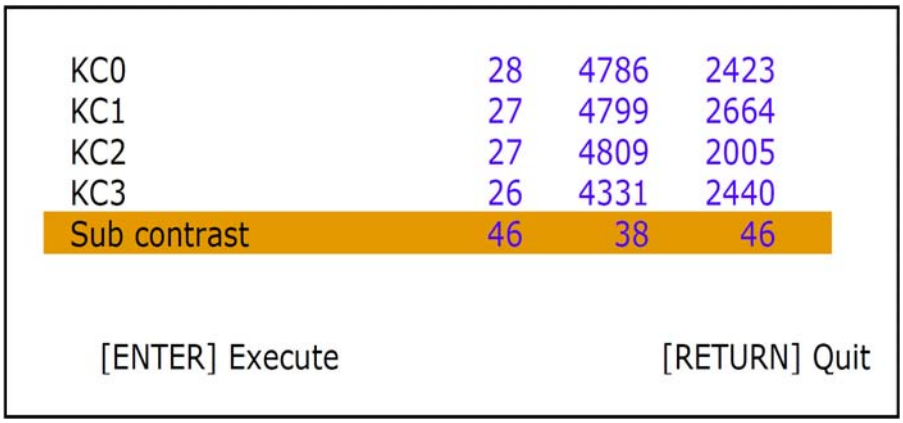
Press **[Enter]** button of the projector.



When the adjustment is successfully completed, values changes from default [85].

(**Example**: The following menu)

If it fails, values don't change from default [85].



Adjust Computer-1 input and Computer-2 input both.

<Altitude>

Press **[On/Standby]** and **[Up]** buttons simultaneously.

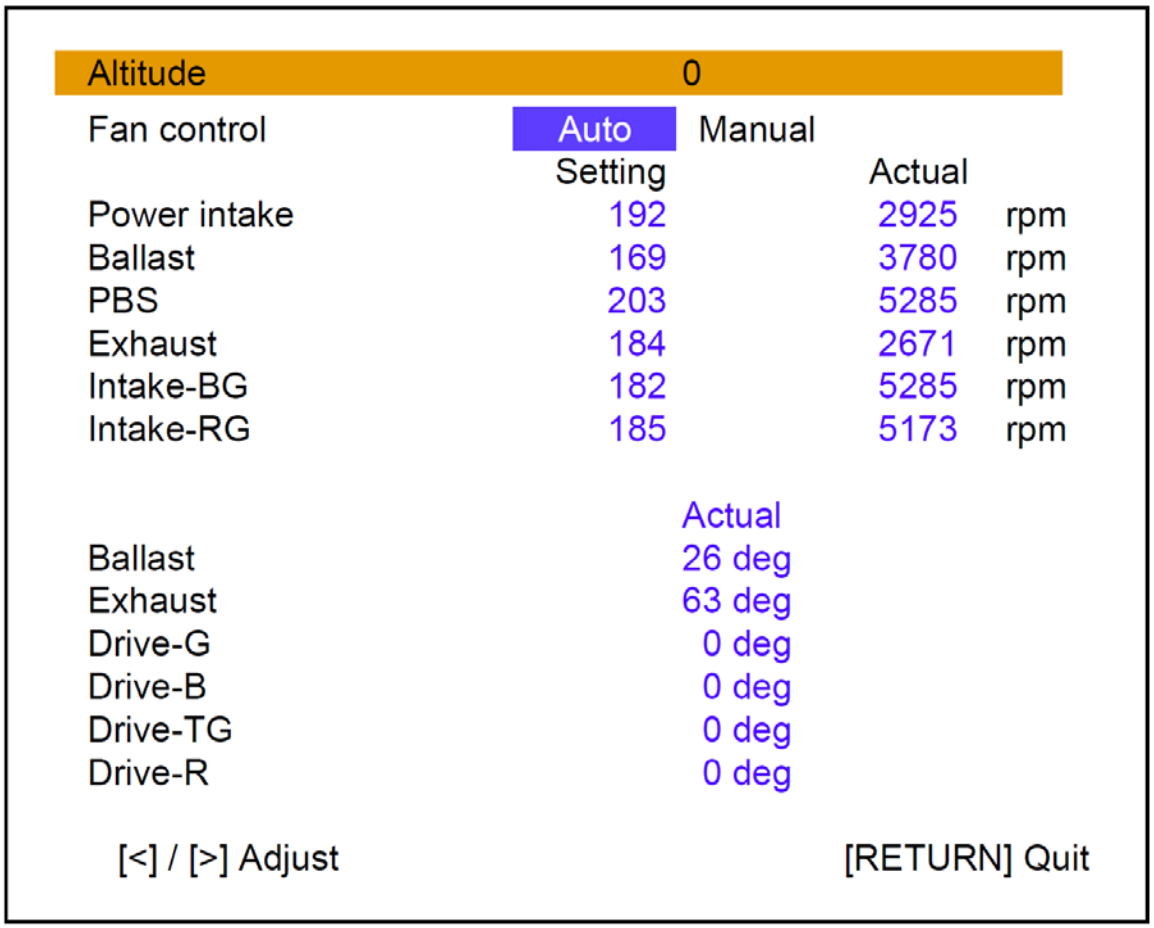
For it initialize the value, Press **[Keystone]** button.

Select proper value by pressing the **[Left]** or **[Right]** button.

Factory setting is 0.

The value 1 is more than 500m (1,640ft) and under 1,000m (3,281ft).
The value 2 is more than 1,000m (3,281ft) and under 1,500m (4,921ft).
The value 3 is more than 1,500m (4,921ft) and under 2,000m (6,562ft).
The value 4 is more than 2,000m (6,562ft) and under 2,500m (8,202ft).
The value 5 is more than 2,500m (8,202ft) and under 3,000m (9,843ft).
The value 6 is more than 3,000m (9,843ft).

For example, in case of 2,700m altitude set the value to 5.

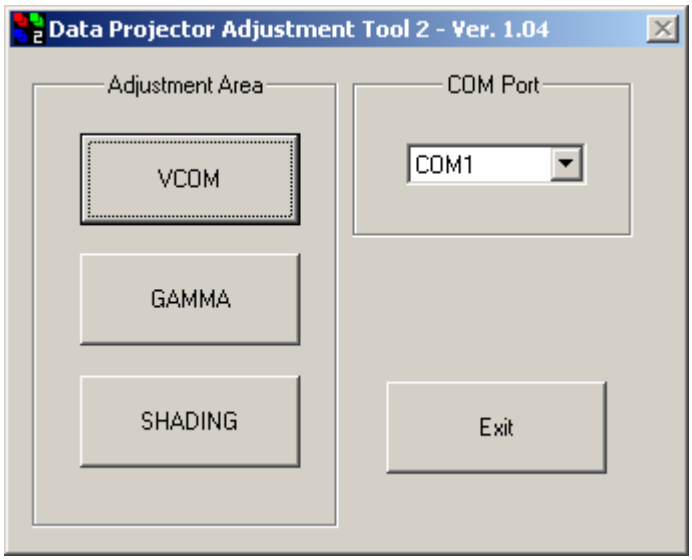


Press **[Return]** button.

<VCOM>

Connect the control cable to the control terminal on the projector.
Then plug the RS232C connector on the other end of the cable into a RS232C port on the computer.
Open Windows Explorer navigate to the location where you stored the Adjustment file,
and then double click the **DPJAdjustmentTool_2500.exe**.

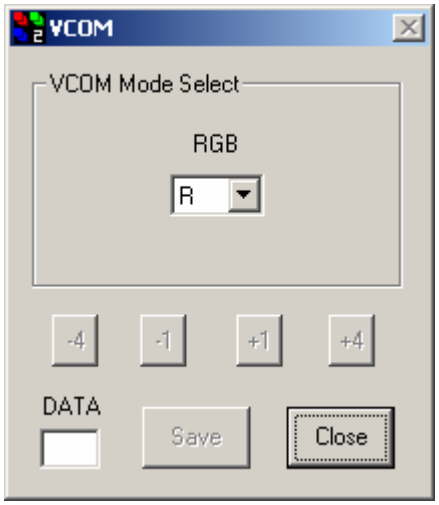
The startup window appears.

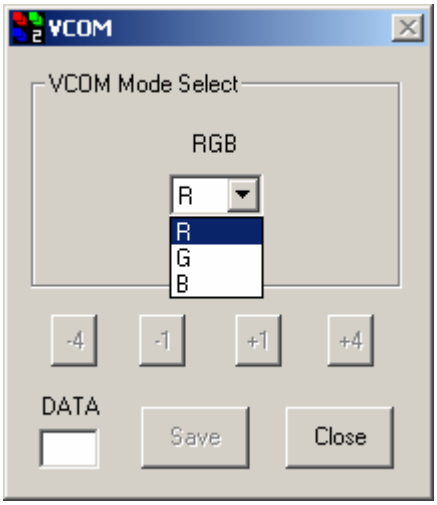


Select the COM port. and click the **[VCOM]** button.

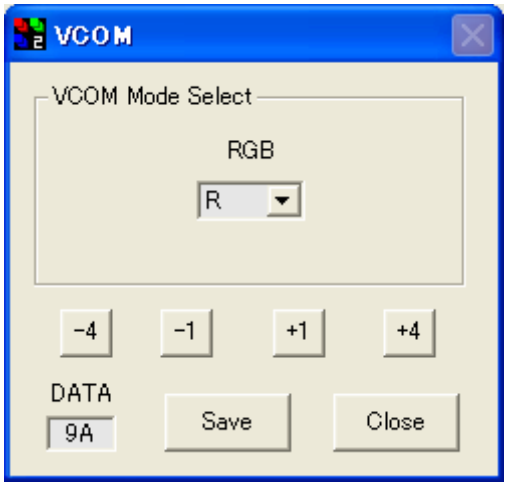
The following window appears.

Select the “R”.

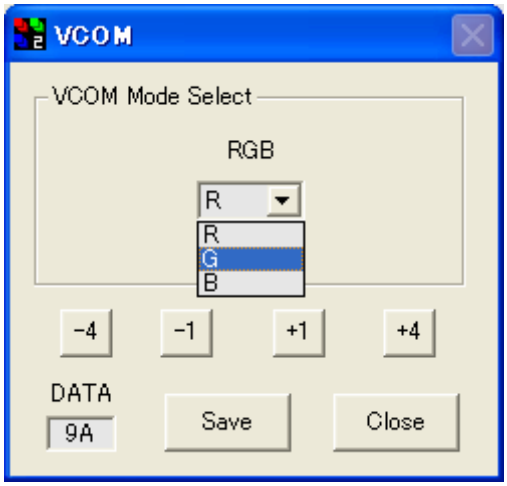




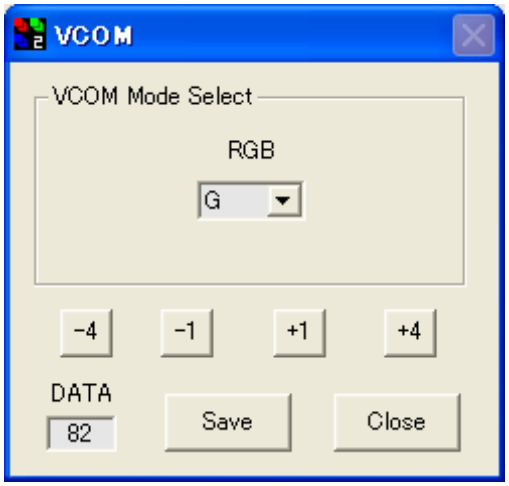
The current data is displayed in DATA column.
Push (+1) or (-1) button.
Adjust the data to reduce the flicker to its minimum point.
By pushing the (+4) or (-4), the data is adjusted in greater steps.
After the adjustment, click the **[Save]** to save the data.



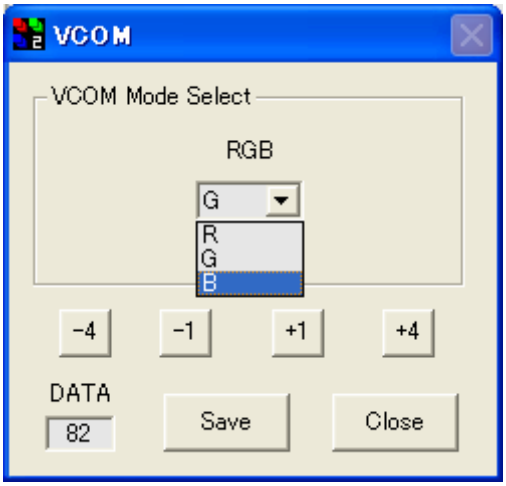
Select the “G”.



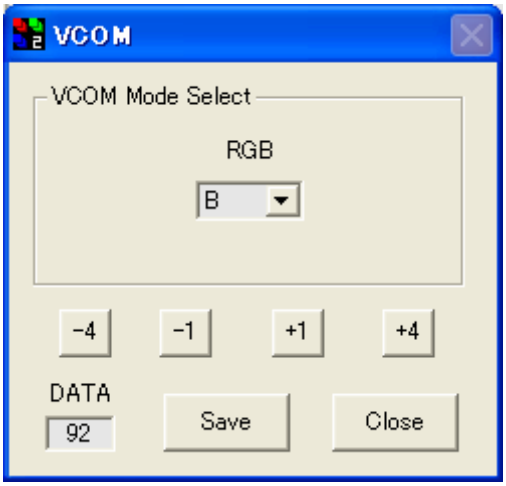
The current data is displayed in DATA column.
Push (+1) or (-1) button.
Adjust the data to reduce the flicker to its minimum point.
By pushing the (+4) or (-4), the data is adjusted in greater steps.
After the adjustment, click the **[Save]** to save the data.



Select the “B”.



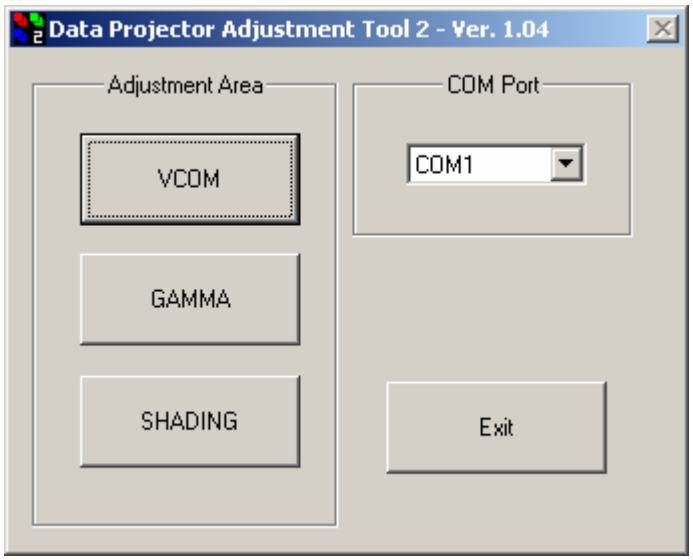
The current data is displayed in DATA column.
Push (+1) or (-1) button.
Adjust the data to reduce the flicker to its minimum point.
By pushing the (+4) or (-4), the data is adjusted in greater steps.
After the adjustment, click the **[Save]** to save the data.



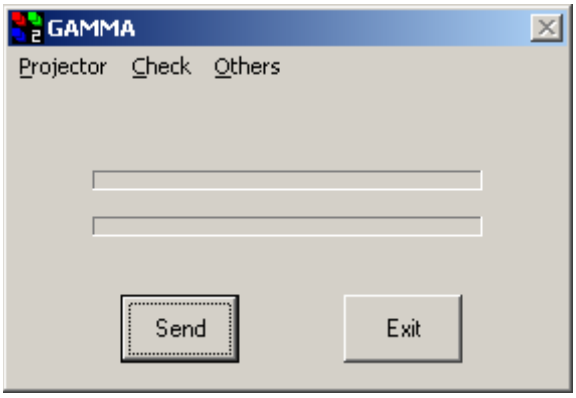
When adjustment of R, G and B finishes, click the **[Close]** button.

<Gamma>

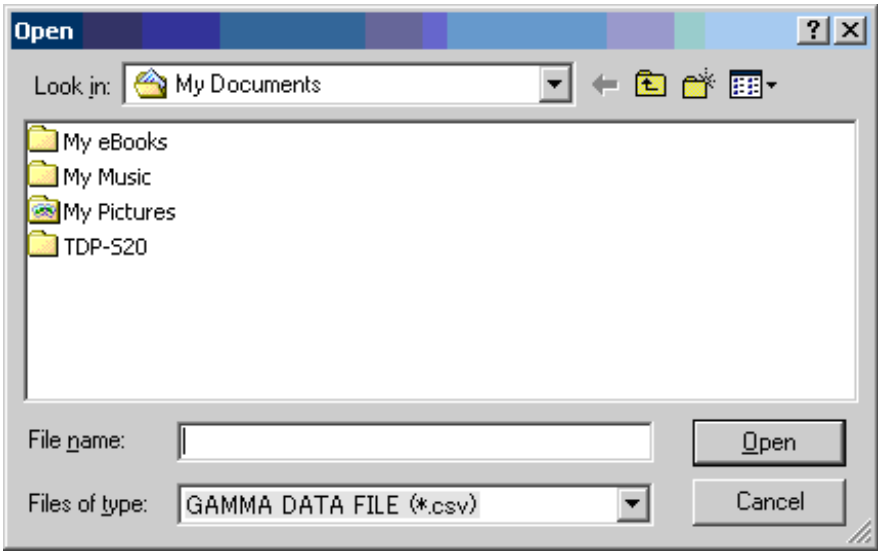
Click the **[GAMMA]** button.



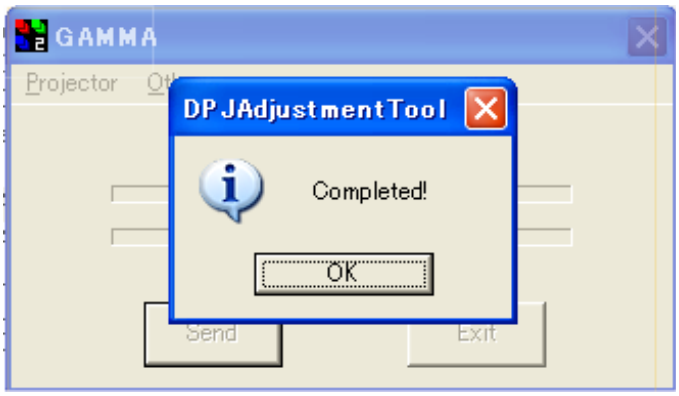
The following window appears.
Click the **[Send]** button.



Select the Gamma data file and click the **[Open]** button. (There are two files for R-type LCD and L-type LCD.)



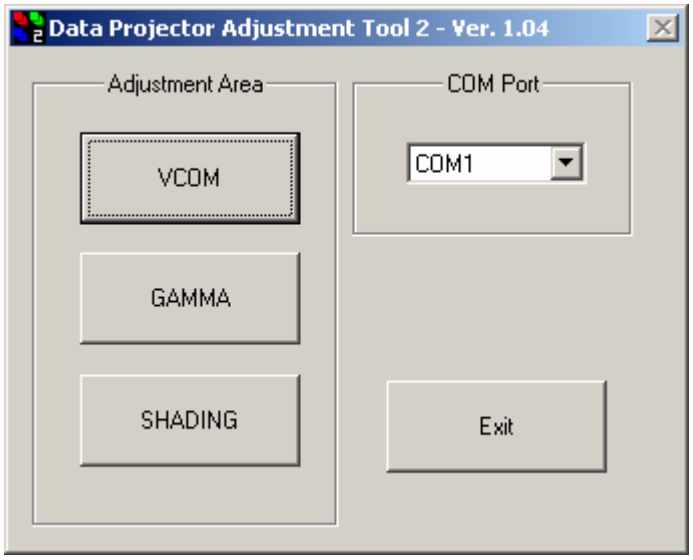
After the transfer is completed, the following message appears.
Click **[OK]** button.



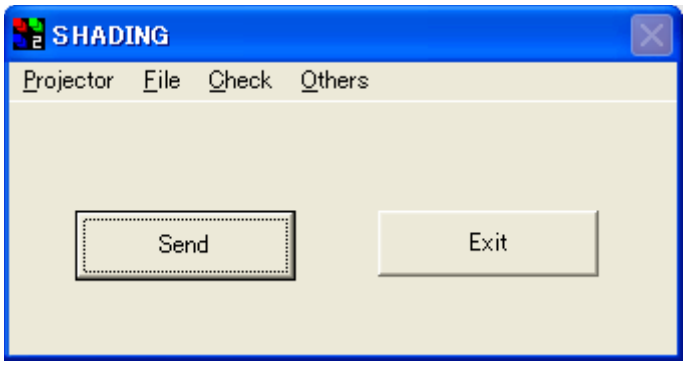
The transferred gamma data will be automatically saved.

<Shading>

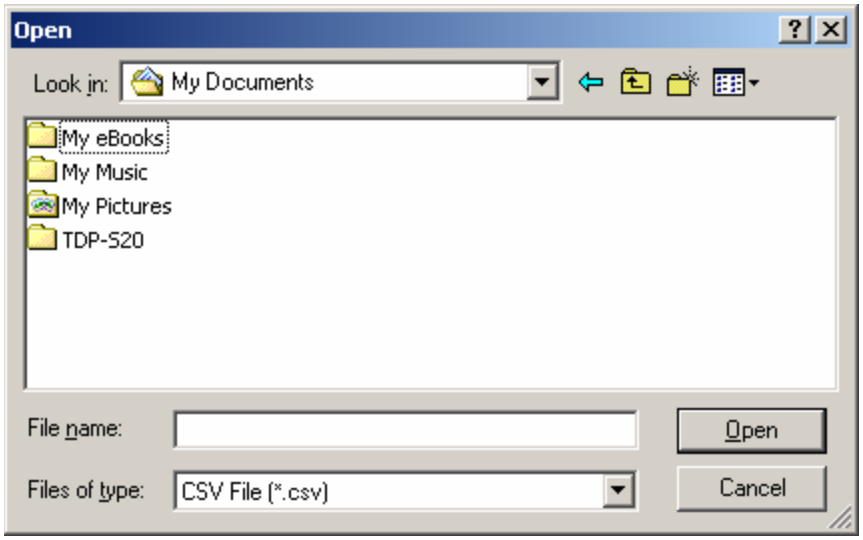
Click the **[SHADING]** button.



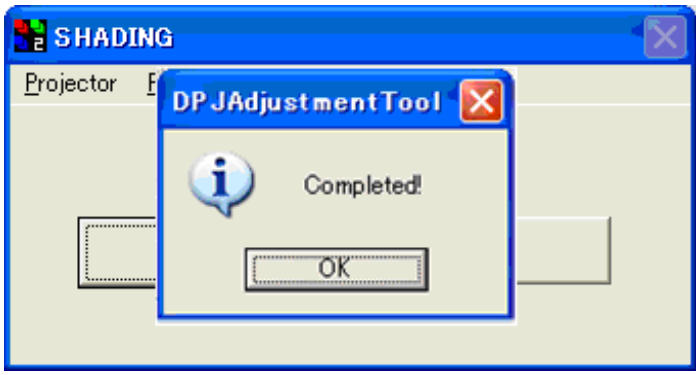
The following window appears.
Click the **[Send]** button.



Select the Shading data file and click the **[Open]** button. (There are two files for R-type LCD and L-type LCD.)



After the transfer is completed, the following message appears.
Click **[OK]** button.



The transferred shading data will be automatically saved.

Functional Test

You perform the functional tests after you' ve repaired the projector to make sure
All components of the projector operate properly.
You can also perform the functional tests if you' re havingtrouble determining what is wrong with the projector.

Required Equipment

Equipment	Notes
Video player	Make sure the video player has an S-video Out port and cables. The player should also have a Composite video port (RCA). Toshiba strongly suggests you use a DVD player to test the Video quality. DVD players reproduce colors better and project Sharper images. The least preferable is a VCR.If you must use a VCR, make sure you use a commercially produces recoding not one recorded from a broadcast source. The VCR must include an S-Video connector in addition to a composite connector.
Commercially produced video	You' ll need the video in DVD, etc. format.
Cables	1. RCA Pin jack cable for Composite video & audio. 2. S-video cable. 3. RGB cable that come with the projector. 4. 3.5mm mini-jack cable for PC audio.
Remote control	Ensure that the remote has fresh AAA batteries.
Projector screen	Use a flat screen, not a curved one.
Personal computer (PC)	The stereo audio card should have either a 3.5mm stereo audio Jack or RCA left and right output ports. The PC must have a CD-ROM and must have outputs for RGBHV, VESA, D-sub15pin.

Before beginning

Make sure the work surface where you perform the functional tests is level and clean.
Place the projector on a soft surface (such as an anti-static mat) when running the tests.

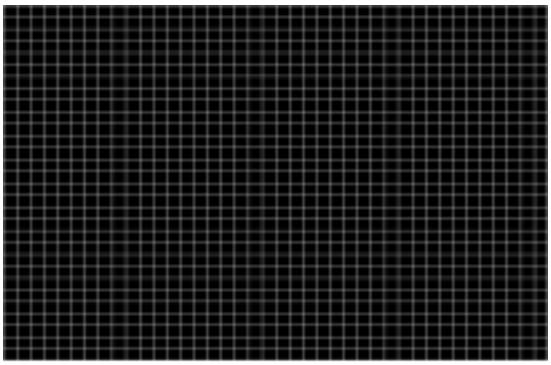
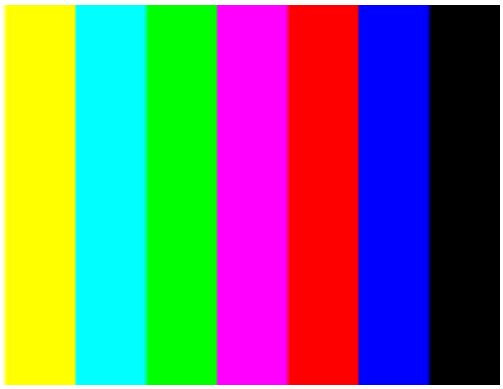
Connect the following the I/O panel on the projector.

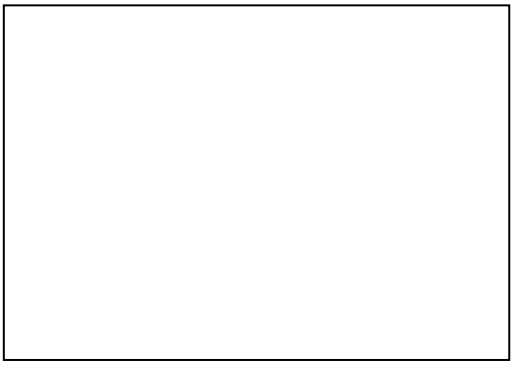
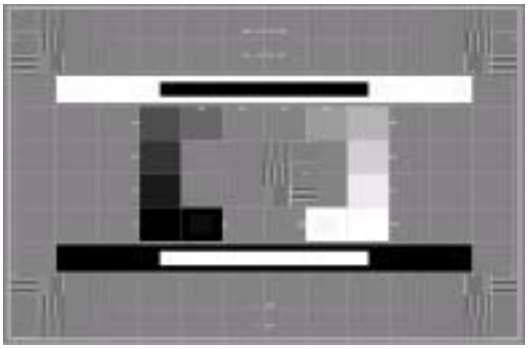
1. Video player through Composite Video and S-video ports.
2. Audio sources through Audio ports (RCA) or 3.5mm mini-jack.
3. Personal computer through RGB cable

.

Perform the following tests

Test	Verification
Power Up Connect AC power, and turn the unit on.	Verify that the proper splash (logo) screen Appears. Verify image quality.
Cosmetics and mechanicals Adjust the projector so that the image is Square. Make sure the lens is at a 90 degree angle to the wall.	Verify that the elevator and leveling foot Are functional. Verify that the focus and zoom rings operate properly. Verify cosmetics.
Composite video from video source Connect the yellow composite (RCA) video Connector to the projector. (Ensure that no other video source is connected to the projector)	Verify that the video automatically synchronizes. Verify there is no distortion, noise or other abnormalities.
S-Video from video source Connect the S-Video cable to the projector. Disconnect the yellow composite (RCA) Video connector.	Verify that the video automatically synchronizes. Verify there is no distortion, noise or other abnormalities.
Image keystone adjustment Connect a video source to the projector.	Verify that image responds properly when You adjust the keystone setting.
Audio from audio source Connect the audio cable to the projector.	Verify that audio source plays through the projector' s speaker. Verify that the volume controls function correctly.
Manual source selection Manually select a connected source.	Verify that the projector switches to the manually-selected source. Verify that the video automatically synchronizes. Verify there is no distortion, noise or other abnormalities.
Software Version / Lamp time Used Navigate through the Basic menu to the Setup menu. Navigate to the Service menu. Select info from the Service menu.	Verify software version Verify the keys are not sticky. Verify that the software version is current and that the lamp is within its service life.

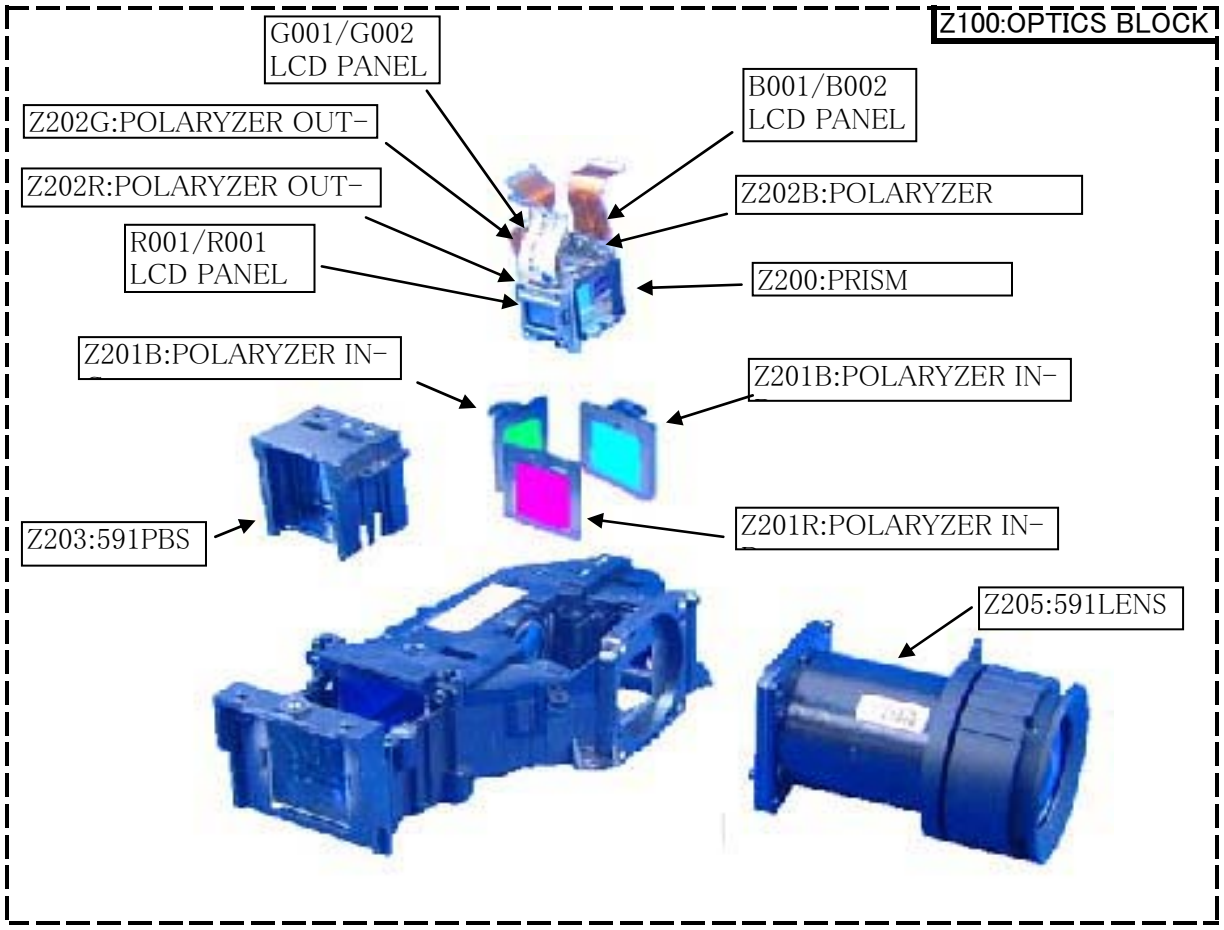
Test	Verification
Focus SINGOWS2000 Cross Hatch image.	Verify that the image synchronizes properly through the computer 1 input.  Verify that image focuses through the full zoom range. Verify there are no problems.
Color Wheel Index Delay SINGOWS2000 Color bar image.	Verify that the image synchronizes properly through the computer 1 input.  Verify that the color is located in a line. Verify there are no problems

Test	Verification
DMD Images SINGOWS2000 White image (Level 100%) SINGOWS2000 Black image (Level 0%) SINGOWS2000 SMPTE image	Verify that each image synchronizes properly through the computer 1 input.    Verify there are no problems
System Reset On the keypad, press the Menu key. Navigate through the basic menu to the default setting menu. Select Reset all.	Verify that the image synchronizes after system reset.
Power Down After all tests are complete turn the power off and disconnect all cables. Attach the lens cap.	Verify unit is powered off before disconnecting cables.

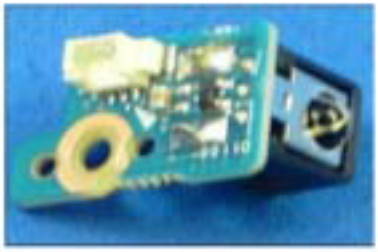
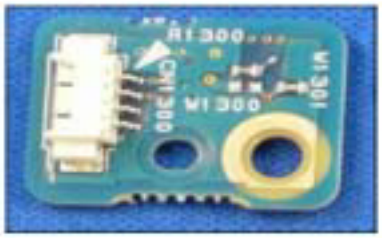
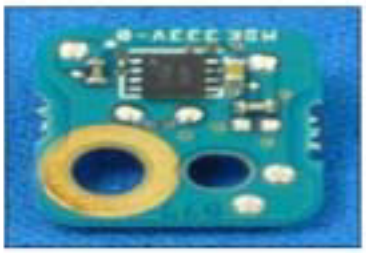
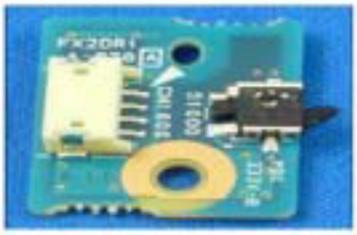
Spare Parts List

Exploded View

Exploded View(Optics Block)



Other Parts

U002 Remote Board	
U003 Exhaust Sensor Board	
U004 Sensor Board	
U005 Door SW Board	
U007 Relay Board	
MJ02 Thermal Switch	

Spare parts list (TLP-X2000) GREEN

No	Location	Description	Part No			
			E	B	U	CH
1	A100	COVER ASSY, TOP	75004216			
2	A101	SCREW, 2.0 X 4.0 MM	70391261			
3	A102A	SCREW	23738144			
4	A110	CASE ASSY, CONTROL UP	75004217			
5	A110A	SCREW, 2.0 X 4.0 MM	70391261			
6	A111	CASE ASSY, CONT LOWER	75004218			
7	A111A	SCREW, 2.0 X 4.0 MM	70391261			
8	A210	COVER ASSY, LAMP	75004221			
9	A220	CAP, LENS	75004222			
10	A230	COVER ASSY, FILTER BOTTOM	75004223			
11	A304	LABEL, CAUTION	75004197			
12	A305	LABEL, CAUTION HOT BLACK	75004198			
13	A306	LABEL, LABEL CAUTION, LENS BLACK	75004200			
14	A307	LABEL, CARTON,TLP-X2000	75004195			
15	A308	LABEL, TOP TAG	75004196			
16	A310	LABEL, CASE LOWER, X2000	75004201			
17	A401	CARTON BOX, X2000	75004232			
18	A401B	SHEET, PROTECTIVE 700X300	75004234			
19	A405	SOFT CASE, X2000	75004233			
20	B001	LCD PANEL, L3P06X-56G20B	75004158			
21	B002	LCD PANEL, L3P06X-55G20B	75004155			
22	B100	COVER ASSY, BOTTOM	75004219			
24	B101	SCREW	23738144			
25	B111	PANEL, FRONT	75004225			
26	B112	PANEL, SIDE	75004226			
27	B113	PANEL ASSY, LENS	75004227			
28	B120	PLATE, AC-IN	75004230			
29	B131	COVER, LAMP	75004220			
30	B141	AIR DUCT, POWER FAN	75004229			
31	B170	AIR DUCT	75004228			
32	CN105	CONNECTOR, 1.25MM PITCH W TO B	75002110			
33	CN108	CONNECTOR, 1.25MM PITCH W TO B	75002110			
34	CN503	CONNECTOR, D-SUB, DZ11A92-ND201-7F	75004141			
35	E255	LENS, ANLC03T	75004215			
36	E270	HOLDER ASSY, LAMP	75004231			
37	G001	LCD PANEL, L3P06X-55G20G	75004154			
38	G002	LCD PANEL, L3P06X-56G20G	75004157			
39	IC100	IC, PW190-10L, IMAGE PROCESSOR	75004414			
40	IC101	IC, BD87A29FVM-TR, VOLTAGE DETECTOR	75004425			
41	IC104	IC, PQ1MX55M2SPQ, LOW VOLTAGE REGULATOR	75004417			
42	IC105	IC, TK11150CSCL-G, POSITIVE LDO REGULATOR	75004418			
43	IC108	IC, 24LC128T-I/SNG	75004412			
44	IC1100	IC, PNA4612M01TH, PD WITH REMOTE CONT	75001241			
45	IC111	IC, TC7SH08FU(TE85L,F)	75001245			
46	IC112	IC, L3232ECV-16Z-T	75004413			
47	IC119	IC, LTC3701EGN#TRPBF, DC/DC CONTROLLER	75004148			
48	IC1200	IC, G751-2RDF, TEMPERATURE SENSOR AND THERMAL WATCHDOG	75004147			
49	IC122	IC, TC7SH08FU(TE85L,F)	75001245			
50	IC123	IC, TC7SH08FU(TE85L,F)	75001245			

No	Location	Description	Part No			
			E	B	U	CH
51	IC124	IC, SN74AHCT1G08DCKR, 2 INPUT AND GATE	75004410			
52	IC125	IC, SN74AHCT1G08DCKR, 2 INPUT AND GATE	75004410			
53	IC126	IC, BD4843G-TR, VOLTAGE DETECTOR	75004150			
54	IC127	IC, TC7SH08FU(TE85L,F)	75001245			
55	IC129	IC, TC7SH08FU(TE85L,F)	75001245			
56	IC1300	IC, G751-2RDF, TEMPERATURE SENSOR AND THERMAL WATCHDOG	75004147			
57	IC350	IC, TC7WBD126AFK(T5L,F, DUAL BUS SWITCH	75001220			
58	IC351	IC, G768BF, TEMPERATURE SENSOR AND FAN CONTROLLER	75004146			
59	IC352	IC, G794D5U, TEMPERATURE SENSOR AND 4FAN CONTROLLER	75004421			
60	IC353	IC, PQ200WNA1ZPH, VOLTAGE REGULATOR	75004422			
61	IC354	IC, PQ200WNA1ZPH, VOLTAGE REGULATOR	75004422			
62	IC355	IC, PQ200WNA1ZPH, VOLTAGE REGULATOR	75004422			
63	IC356	IC, PQ200WNA1ZPH, VOLTAGE REGULATOR	75004422			
64	IC357	IC, PQ200WNA1ZPH, VOLTAGE REGULATOR	75004422			
65	IC358	IC, M62334FP DF5J, D/A CONVERTER	75001226			
66	IC359	IC, PQ200WNA1ZPH, VOLTAGE REGULATOR	75004422			
67	IC501	IC, XC95144XL-10TQG100C-X2000	75004143			
68	IC502	IC, MXD2020EL-T/R, ACCELEROMETER	75004419			
69	IC503	IC, MAX4885ETJ+TG40, ANALOG SWITCH	75004151			
70	IC504	IC, EL4340IUZ-T7, MULTIPLEXING AMPLIFIER	75004429			
71	IC505	IC, SN74LVC2G17DCKR, DUAL SCHMITT-TRIGGER BUFFER	75004411			
72	IC506	IC, EL4332CSZ-T7, VIDEO MULTIPLEXING	75001323			
73	IC507	IC, EL5106IWZ-T7, GAIN AMPLIFIER	75004430			
74	IC508	IC, EL5106IWZ-T7, GAIN AMPLIFIER	75004430			
75	IC509	IC, SN74LVC2G17DCKR, DUAL SCHMITT-TRIGGER BUFFER	75004411			
76	IC510	IC, SN74LVC2G17DCKR, DUAL SCHMITT-TRIGGER BUFFER	75004411			
77	IC511	IC, ISL59885ISZ-T7, VIDEO SYNC SEPARATOR	75004424			
78	IC512	IC, ISL59885ISZ-T7, VIDEO SYNC SEPARATOR	75004424			
79	IC513	IC, BU9882FV-WE2, 2KBIT EEPROM	75004415			
80	IC514	IC, MM1565AFBE, VOLTAGE REGULATOR	75004420			
81	IC515	IC, LM2660MM, SWITCHED CAPACITOR VOLTAGE CON	75001237			
82	IC6001	IC, NJM2370U1-09-TE1, VOLTAGE REGULATOR	75001239			
83	IC6002	IC, NJM2370U1-09-TE1, VOLTAGE REGULATOR	75001239			
84	IC6003	IC, NJM2886DL3-05(TE1), LOW DROPOUT VOLTAGE REGULATOR	75004427			
85	IC6004	IC, TPA2005D1DGNRG4, AUDIO POWER AMPLIFIER	75004428			
86	IC6005	IC, NJW1142AV(TE1), AUDIO PROCESSOR	75004426			
87	IC6010	IC, EL1883ISZ-T7, SYNC SEPARATOR	75004423			
88	IC6011	IC, EL1883ISZ-T7, SYNC SEPARATOR	75004423			
89	IC6012	IC, TC7SH08FU(TE85L,F)	75001245			
90	IC6021	IC, TC7SH08FU(TE85L,F)	75001245			
91	IC701	IC, PQ20VZ1UJ00H, LOW VOLTAGE REGULATOR	75004416			
92	IC702	IC, TC7SH08FU(TE85L,F)	75001245			
93	IC703	IC, BA10324AFV-E2,QUAD OPERATIONAL AMPLIFIER	75004149			
94	IC704	IC, L3E07072K0A, TFT-LCD CONTROLLER	75004145			
95	IC801	IC, L3E06100D0B, TFT-LCD CONTROLLER	75004144			
96	IC831	IC, L3E06100D0B, TFT-LCD CONTROLLER	75004144			
97	IC861	IC, L3E06100D0B, TFT-LCD CONTROLLER	75004144			
98	J6001	CONNECTOR, LAP5300-0110F	75004140			
99	MJ02	WIRE HARNESS, THERMAL SWITCH	75005121			
100	P800	PC BOARD ASSY, LINE-FILTER, APS-T602	23122519			

No	Location	Description	Part No			
			E	B	U	CH
101	P801	PC BOARD ASSY, MAIN POWER, APS-T603	23122520			
102	P850	PC BOARD ASSY, LAMP POWER, PS-240A-MS-120-22H	75004203			
103	Q101	TRANSISTOR, UM6K1NTN, N-CH MOS FET MODULE	75004142			
104	R001	LCD PANEL, L3P06X-56G20R	75004156			
105	R002	LCD PANEL, L3P06X-55G20R	75004153			
106	S1605	SWITCH, TACT, TSW-6A-1-16-T50	75004139			
107	S501	SWITCH, SLIDE, SLD-12-500	75004138			
108	SP200	SPEAKER, RFF-0401C-02	23351359			
109	U001	PC BOARD ASSY, MAIN, FX2MA2	75004132			
110	U002	PC BOARD ASSY, REMOCON RECEIVER, FX2RE2	75004133			
111	U003	PC BOARD ASSY, EXHAUST SENSOR, FX2EX2	75004134			
112	U004	PC BOARD ASSY, SENSOR, FX2SE2	75004135			
113	U005	PC BOARD ASSY, DOOR SWITCH, FX2DR2	75004136			
114	U006	PC BOARD ASSY, KEY, FX2KY2	75004137			
115	U007	PC BOARD ASSY, RELAY BOARD, FX2RL2	75004131			
116	Y100	CABLE, RGB, BLUE	23368955			
117	Y200	OWNERS MANUAL ASSY, X2000, MULTI LANGUAGE	75004235	75004235	75004235	-----
118	Y200	OWNER'S MANUAL, TLP-X2000C	-----	-----	-----	75004975
119	Y201	CD-ROM, OWNERS MANUAL, X2000 SIRIES	75004236			
120	Y260	POWER CORD, CEE 250V 6A, 3M	23372167	-----	-----	-----
121	Y260	POWER CORD, UL 125V 10A, 3M	-----	-----	23372148	-----
122	Y260	POWER CORD, GB250V10A	-----	-----	-----	23372155
123	Y260	POWER CORD, UK250V6A	-----	23372337	-----	-----
124	Y700	REMOCON HAND UNIT, CT-90264	75004204			
125	Y702	REMOCON RECIVER, IR, MOUS, CR-916	23306621			
126	Z100	FAN, TYF450FJ06	75004190			
127	Z100	OPTICS BLOCK, CJ591TA	75004205			
128	Z101	FAN, TYF400FJ10	75004160			
129	Z102	FAN, D05F-12BS2 02A	23125960			
130	Z103	FAN, TYF310FJ11	75004159			
131	Z104	FAN, D05F-12PS7 01A(EX)	75004191			
132	Z105	FAN, D07R-12TH 03A(EX)	75004192			
133	Z200	OPTICS BLOCK, 591SUB	75004207			
134	Z201B	OPTICS BLOCK, 591IN-B	75004210			
135	Z201G	OPTICS BLOCK, 591IN-G	75004209			
136	Z201R	OPTICS BLOCK, 591IN-R	75004208			
137	Z202B	OPTICS BLOCK, 591OUT-B	75004213			
138	Z202G	OPTICS BLOCK, 591OUT-G	75004212			
139	Z202R	OPTICS BLOCK, 591OUT-R	75004211			
140	Z203	LENS, 591PBS	75004214			
141	Z205	LENS, 591LENS	75004206			

Spare parts list (TLP-X2500) GREEN

No	Location	Description	Part No			
			E	B	U	CH
1	A100	COVER ASSY, TOP	75004216			
2	A101	SCREW, 2.0 X 4.0 MM	70391261			
3	A102A	SCREW	23738144			
4	A110	CASE ASSY, CONTROL UP	75004217			
5	A110A	SCREW, 2.0 X 4.0 MM	70391261			
6	A111	CASE ASSY, CONT LOWER	75004218			
7	A111A	SCREW, 2.0 X 4.0 MM	70391261			
8	A210	COVER ASSY, LAMP	75004221			
9	A220	CAP, LENS	75004222			
10	A230	COVER ASSY, FILTER BOTTOM	75004223			
11	A401	CARTON BOX, X2000	75004232			
12	A405	SOFT CASE, X2000	75004233			
13	B001	LCD PANEL, L3P06X-66G00B	75004771			
14	B002	LCD PANEL, L3P06X-65G00B	75004767			
15	B100	COVER ASSY, BOTTOM	75004219			
16	B111	PANEL, FRONT	75004225			
17	B112	PANEL, SIDE	75004226			
18	B113	PANEL ASSY, LENS	75004227			
19	B120	PLATE, AC-IN	75004230			
20	B131	COVER, LAMP	75004220			
21	B141	AIR DUCT, POWER FAN	75004229			
22	B170	AIR DUCT	75004228			
23	CN105	CONNECTOR, 1.25MM PITCH W TO B	75002110			
24	CN108	CONNECTOR, 1.25MM PITCH W TO B	75002110			
25	CN503	CONNECTOR, D-SUB, DZ11A92-ND201-7F	75004141			
26	E255	LENS, ANLC03T	75004215			
27	E270	HOLDER ASSY, LAMP	75004231			
28	G001	LCD PANEL, L3P06X-65G00G	75004766			
29	G002	LCD PANEL, L3P06X-66G00G	75004769			
30	IC100	IC, PW190-10L, IMAGE PROCESSOR	75004414			
31	IC101	IC, BD87A29FVM-TR, VOLTAGE DETECTOR	75004425			
32	IC104	IC, PQ1MX55M2SPQ, LOW VOLTAGE REGULATOR	75004417			
33	IC105	IC, TK11150CSCL-G, POSITIVE LDO REGULATOR	75004418			
34	IC107	IC, ES29LV160ET-70TGI	75004763			
35	IC1100	IC, PNA4612M01TH, PD WITH REMOTE CONT	75001241			
36	IC111	IC, TC7SH08FU(TE85L,F)	75001245			
37	IC112	IC, L3232ECV-16Z-T	75004413			
38	IC119	IC, LTC3701EGN#TRPBF, DC/DC CONTROLLER	75004148			
39	IC1200	IC, G751-2RDF, TEMPERATURE SENSOR AND THERMAL WATCHDOG	75004147			
40	IC122	IC, TC7SH08FU(TE85L,F)	75001245			
41	IC123	IC, TC7SH08FU(TE85L,F)	75001245			
42	IC124	IC, SN74AHCT1G08DCKR, 2 INPUT AND GATE	75004410			
43	IC125	IC, SN74AHCT1G08DCKR, 2 INPUT AND GATE	75004410			
44	IC126	IC, BD4843G-TR, VOLTAGE DETECTOR	75004150			
45	IC127	IC, TC7SH08FU(TE85L,F)	75001245			
46	IC129	IC, TC7SH08FU(TE85L,F)	75001245			
47	IC1300	IC, G751-2RDF, TEMPERATURE SENSOR AND THERMAL WATCHDOG	75004147			
48	IC350	IC, TC7WBD126AFK(T5L,F, DUAL BUS SWITCH	75001220			
49	IC351	IC, G768BF, TEMPERATURE SENSOR AND FAN CONTROLLER	75004146			
50	IC352	IC, G794D5U, TEMPERATURE SENSOR AND 4FAN CONTROLLER	75004421			

No	Location	Description	Part No			
			E	B	U	CH
51	IC353	IC, PQ200WNA1ZPH, VOLTAGE REGULATOR	75004422			
52	IC354	IC, PQ200WNA1ZPH, VOLTAGE REGULATOR	75004422			
53	IC355	IC, PQ200WNA1ZPH, VOLTAGE REGULATOR	75004422			
54	IC356	IC, PQ200WNA1ZPH, VOLTAGE REGULATOR	75004422			
55	IC357	IC, PQ200WNA1ZPH, VOLTAGE REGULATOR	75004422			
56	IC358	IC, M62334FP DF5J, D/A CONVERTER	75001226			
57	IC359	IC, PQ200WNA1ZPH, VOLTAGE REGULATOR	75004422			
58	IC501	IC, XC95144XL-10TQG100C-X2000	75004143			
59	IC502	IC, MXD2020EL-T/R, ACCELEROMETER	75004419			
60	IC503	IC, MAX4885ETJ+TG40, ANALOG SWITCH	75004151			
61	IC504	IC, EL4340IUZ-T7, MULTIPLEXING AMPLIFIER	75004429			
62	IC505	IC, SN74LVC2G17DCKR, DUAL SCHMITT-TRIGGER BUFFER	75004411			
63	IC506	IC, EL4332CSZ-T7, VIDEO MULTIPLEXING	75001323			
64	IC507	IC, EL5106IWZ-T7, GAIN AMPLIFIER	75004430			
65	IC508	IC, EL5106IWZ-T7, GAIN AMPLIFIER	75004430			
66	IC509	IC, SN74LVC2G17DCKR, DUAL SCHMITT-TRIGGER BUFFER	75004411			
67	IC510	IC, SN74LVC2G17DCKR, DUAL SCHMITT-TRIGGER BUFFER	75004411			
68	IC511	IC, ISL59885ISZ-T7, VIDEO SYNC SEPARATOR	75004424			
69	IC512	IC, ISL59885ISZ-T7, VIDEO SYNC SEPARATOR	75004424			
70	IC513	IC, BU9882FV-WE2, 2KBIT EEPROM	75004415			
71	IC514	IC, MM1565AFBE, VOLTAGE REGULATOR	75004420			
72	IC515	IC, LM2660MM, SWITCHED CAPACITOR VOLTAGE	75001237			
73	IC6001	IC, NJM2370U1-09-TE1, VOLTAGE REGULATOR	75001239			
74	IC6002	IC, NJM2370U1-09-TE1, VOLTAGE REGULATOR	75001239			
75	IC6003	IC, NJM2886DL3-05(TE1), LOW DROPOUT VOLTAGE REGULATOR	75004427			
76	IC6004	IC, TPA2005D1DGNRG4, AUDIO POWER AMPLIFIER	75004428			
77	IC6005	IC, NJW1142AV(TE1), AUDIO PROCESSOR	75004426			
78	IC6010	IC, EL1883ISZ-T7, SYNC SEPARATOR	75004423			
79	IC6011	IC, EL1883ISZ-T7, SYNC SEPARATOR	75004423			
80	IC6012	IC, TC7SH08FU(TE85L,F)	75001245			
81	IC6021	IC, TC7SH08FU(TE85L,F)	75001245			
82	IC701	IC, PQ20VZ1UJ00H, LOW VOLTAGE REGULATOR	75004416			
83	IC702	IC, R1172H121D-T1-F, VOLTAGE REGULATOR	75004762			
84	IC703	IC, TC7SH08FU(TE85L,F)	75001245			
85	IC704	IC, L3E07110K0A,TIMING PULSE GENERATOR	75004760			
86	IC801	IC, L3E06150S2A,TFT-LCD CONTROLLER	75004761			
87	IC802	IC, L3E01060P0A	75004759			
88	IC831	IC, L3E06150S2A,TFT-LCD CONTROLLER	75004761			
89	IC832	IC, L3E01060P0A	75004759			
90	IC861	IC, L3E06150S2A,TFT-LCD CONTROLLER	75004761			
91	IC862	IC, L3E01060P0A	75004759			
92	J6001	CONNECTOR, LAP5300-0110F	75004140			
93	MJ02	SWITCH, THERMAL SWITCH WITH WIRE HARNESS	75005121			
94	P800	PC BOARD ASSY, LINE-FILTER, APS-T602	23122519			
95	P801	PC BOARD ASSY, MAIN POWER, APS-T603	23122520			
96	P850	PC BOARD ASSY, LAMP POWER, PS-240A-MS-120-22H	75004203			
97	Q101	TRANSISTOR, UM6K1NTN, N-CH MOS FET MODULE	75004142			
98	R001	LCD PANEL, L3P06X-66G00R	75004768			
99	R002	LCD PANEL, L3P06X-65G00R	75004764			
100	S1605	SWITCH, TACT, TSW-6A-1-16-T50	75004139			

No	Location	Description	Part No			
			E	B	U	CH
101	S501	SWITCH, SLIDE, SLD-12-500	75004138			
102	SP200	SPEAKER, RFF-0401C-02	23351359			
103	U001	PC BOARD ASSY, MAIN, FX5MA2, TLP-X2500	75004673			
104	U002	PC BOARD ASSY, REMOCON, FX5RE2, TLP-X2500	75004674			
105	U003	PC BOARD ASSY, EXTERNAL, FX5EX2, TLP-X2500	75004675			
106	U004	PC BOARD ASSY, SENSOR, FX5SE2, TLP-X2500	75004676			
107	U005	PC BOARD ASSY, DOOR SWITCH, FX5DR2, TLP-X2500	75004677			
108	U006	PC BOARD ASSY, KEY, FX5KY2, TLP-X2500	75004678			
109	U007	PC BOARD ASSY, FX2RL2	75004131			
110	Y100	CABLE, RGB, BLUE	23368955			
111	Y200	OWNERS MANUAL, X2500U/E/B/J	75004777			-----
112	Y200	OWNERS MANUAL, X2500C	-----	-----	-----	75005669
113	Y205	OWNER'S MANUAL, X2000SERIES ERRATA	75004435			
114	Y260	POWER CORD, CEE250V6A 3M	23372167	-----	-----	-----
115	Y260	POWER CORD, UL125V10A 3M	-----	-----	23372148	-----
116	Y260	POWER CORD SET, UK250V6A	-----	23372337	-----	-----
117	Y260	POWER CORD, GB250V10A	-----	-----	-----	23372155
118	Y700	REMOCON HAND UNIT, CT-90266	75004774			
119	Y702	REMOCON RECIVER, IR, MOUS, CR-916	23306621			
120	Z100	FAN, TYF450FJ06	75004190			
121	Z100	OPTICAL BLOCK, ENGINE, CJ590TA	75004775			
122	Z101	FAN, TYF400FJ10	75004160			
123	Z102	FAN, D05F-12BS2 02A	23125960			
124	Z103	FAN, TYF310FJ11	75004159			
125	Z104	FAN, D05F-12PS7 01A(EX)	75004191			
126	Z105	FAN, D07R-12TH 03A(EX)	75004192			
127	Z200	OPTICAL BLOCK, SUB ASSY, 590SUB	75004776			
128	Z201B	POLARIZER, 591IN-B	75004210			
129	Z201G	POLARIZER, 591IN-G	75004209			
130	Z201R	POLARIZER, 591IN-R	75004208			
131	Z202B	POLARIZER, 591OUT-B	75004213			
132	Z202G	POLARIZER, 591OUT-G	75004212			
133	Z202R	POLARIZER, 591OUT-R	75004211			
134	Z203	LENS, 591PBS	75004214			
135	Z205	LENS, 591LENS	75004206			

Spare parts list (TLP-X3000) GREEN

No	Location	Description	Part No			
			E	B	U	CH
1	A100	COVER ASSY, TOP	75004216			
2	A101	SCREW, 2.0 X 4.0 MM	70391261			
3	A102A	SCREW	23738144			
4	A110	CASE ASSY, CONTROL UP	75004217			
5	A110A	SCREW, 2.0 X 4.0 MM	70391261			
6	A111	CASE ASSY, CONT LOWER	75004218			
7	A111A	SCREW, 2.0 X 4.0 MM	70391261			
8	A210	COVER ASSY, LAMP	75004221			
9	A220	LENS CAP, 07 MDN	75005367			
10	A230	COVER ASSY, FILTER BOTTOM	75004223			
11	A301	LABEL, RATING, X3000	75005357			
12	A401	CARTON BOX, X2000	75004232			
13	A405	SOFT CASE, X2000	75004233			
14	A502	LABEL	23564859			
15	B001	LCD PANEL, L3P07X-66G00B	75005356			
16	B002	LCD PANEL, L3P07X-65G00B	75005353			
17	B100	COVER ASSY, BOTTOM	75004219			
18	B111	PANEL, FRONT	75004225			
19	B112	PANEL, SIDE	75004226			
20	B113	PANEL ASSY, LENS	75004227			
21	B120	PLATE, AC-IN	75004230			
22	B131	COVER, LAMP	75004220			
23	B141	AIR DUCT, POWER FAN	75004229			
24	B170	AIR DUCT	75004228			
25	CN105	CONNECTOR, 1.25MM PITCH W TO B	75002110			
26	CN108	CONNECTOR, 1.25MM PITCH W TO B	75002110			
27	CN503	CONNECTOR, D-SUB, DZ11A92-ND201-7F	75004141			
28	E270	HOLDER ASSY, LAMP	75004231			
29	G001	LCD PANEL, L3P07X-65G00G	75005352			
30	G002	LCD PANEL, L3P07X-66G00G	75005355			
31	IC100	IC, PW190-10L, IMAGE PROCESSOR	75004414			
32	IC101	IC, BD87A29FVM-TR, VOLTAGE DETECTOR	75004425			
33	IC104	IC, PQ1MX55M2SPQ, LOW VOLTAGE REGULATOR	75004417			
34	IC105	IC, TK11150CSCL-G, POSITIVE LDO REGULATOR	75004418			
35	IC107	IC, ES29LV160ET-70TGI	75004763			
36	IC1100	IC, PNA4612M01TH, PD WITH REMOTE CONT	75001241			
37	IC111	IC, TC7SH08FU(TE85L,F)	75001245			
38	IC112	IC, L3232ECV-16Z-T	75004413			
39	IC119	IC, LTC3701EGN#TRPBF, DC/DC CONTROLLER	75004148			
40	IC1200	IC, G751-2RDF, TEMPERATURE SENSOR AND THERMAL WATCHDOG	75004147			
41	IC122	IC, TC7SH08FU(TE85L,F)	75001245			
42	IC123	IC, TC7SH08FU(TE85L,F)	75001245			
43	IC124	IC, SN74AHCT1G08DCKR, 2 INPUT AND GATE	75004410			
44	IC125	IC, SN74AHCT1G08DCKR, 2 INPUT AND GATE	75004410			
45	IC126	IC, BD4843G-TR, VOLTAGE DETECTOR	75004150			
46	IC127	IC, TC7SH08FU(TE85L,F)	75001245			
47	IC129	IC, TC7SH08FU(TE85L,F)	75001245			
48	IC1300	IC, G751-2RDF, TEMPERATURE SENSOR AND THERMAL WATCHDOG	75004147			
49	IC350	IC, TC7WBD126AFK(T5L,F, DUAL BUS SWITCH	75001220			

No	Location	Description	Part No			
			E	B	U	CH
50	IC351	IC, G768BF, TEMPERATURE SENSOR AND FAN CONTROLLER	75004146			
51	IC352	IC, G794D5U, TEMPERATURE SENSOR AND 4FAN CONTROLLER	75004421			
52	IC353	IC, PQ200WNA1ZPH, VOLTAGE REGULATOR	75004422			
53	IC354	IC, PQ200WNA1ZPH, VOLTAGE REGULATOR	75004422			
54	IC355	IC, PQ200WNA1ZPH, VOLTAGE REGULATOR	75004422			
55	IC356	IC, PQ200WNA1ZPH, VOLTAGE REGULATOR	75004422			
56	IC357	IC, PQ200WNA1ZPH, VOLTAGE REGULATOR	75004422			
57	IC358	IC, M62334FP DF5J, D/A CONVERTER	75001226			
58	IC359	IC, PQ200WNA1ZPH, VOLTAGE REGULATOR	75004422			
59	IC501	IC, XC95144XL-10TQG100C-X2000	75004143			
60	IC502	IC, MXD2020EL-T/R, ACCELEROMETER	75004419			
61	IC503	IC, MAX4885ETJ+TG40, ANALOG SWITCH	75004151			
62	IC504	IC, EL4340IUZ-T7, MULTIPLEXING AMPLIFIER	75004429			
63	IC505	IC, SN74LVC2G17DCKR, DUAL SCHMITT-TRIGGER BUFFER	75004411			
64	IC506	IC, EL4332CSZ-T7, VIDEO MULTIPLEXING	75001323			
65	IC507	IC, EL5106IWZ-T7, GAIN AMPLIFIER	75004430			
66	IC508	IC, EL5106IWZ-T7, GAIN AMPLIFIER	75004430			
67	IC509	IC, SN74LVC2G17DCKR, DUAL SCHMITT-TRIGGER BUFFER	75004411			
68	IC510	IC, SN74LVC2G17DCKR, DUAL SCHMITT-TRIGGER BUFFER	75004411			
69	IC511	IC, ISL59885ISZ-T7, VIDEO SYNC SEPARATOR	75004424			
70	IC512	IC, ISL59885ISZ-T7, VIDEO SYNC SEPARATOR	75004424			
71	IC513	IC, BU9882FV-WE2, 2KBIT EEPROM	75004415			
72	IC514	IC, MM1565AFBE, VOLTAGE REGULATOR	75004420			
73	IC515	IC, LM2660MM, SWITCHED CAPACITOR VOLTAGE CON	75001237			
74	IC6001	IC, NJM2370U1-09-TE1, VOLTAGE REGULATOR	75001239			
75	IC6002	IC, NJM2370U1-09-TE1, VOLTAGE REGULATOR	75001239			
76	IC6003	IC, NJM2886DL3-05(TE1), LOW DROPOUT VOLTAGE REGULATOR	75004427			
77	IC6004	IC, TPA2005D1DGNRG4, AUDIO POWER AMPLIFIER	75004428			
78	IC6005	IC, NJW1142AV(TE1), AUDIO PROCESSOR	75004426			
79	IC6010	IC, EL1883ISZ-T7, SYNC SEPARATOR	75004423			
80	IC6011	IC, EL1883ISZ-T7, SYNC SEPARATOR	75004423			
81	IC6012	IC, TC7SH08FU(TE85L,F)	75001245			
82	IC6021	IC, TC7SH08FU(TE85L,F)	75001245			
83	IC701	IC, PQ20VZ1UJ00H, LOW VOLTAGE REGULATOR	75004416			
84	IC702	IC, R1172H121D-T1-F, VOLTAGE REGULATOR	75004762			
85	IC703	IC, TC7SH08FU(TE85L,F)	75001245			
86	IC704	IC, L3E07110K0A,TIMING PULSE GENERATOR	75004760			
87	IC801	IC, L3E06150S2A,TFT-LCD CONTROLLER	75004761			
88	IC802	IC, L3E01060P0A	75004759			
89	IC831	IC, L3E06150S2A,TFT-LCD CONTROLLER	75004761			
90	IC832	IC, L3E01060P0A	75004759			
91	IC861	IC, L3E06150S2A,TFT-LCD CONTROLLER	75004761			
92	IC862	IC, L3E01060P0A	75004759			
93	J6001	CONNECTOR, LAP5300-0110F	75004140			
94	MJ02	SWITCH, THERMAL SWITCH WITH WIRE HARNESS	75005121			
95	P800	PC BOARD ASSY, LINE-FILTER, APS-T602	23122519			

No	Location	Description	Part No			
			E	B	U	CH
96	P801	PC BOARD ASSY, MAIN POWER, APS-T603	23122520			
97	P850	PC BOARD ASSY, LAMP POWER, PS-240A-MS-120-22H	75004203			
98	Q101	TRANSISTOR, UM6K1NTN, N-CH MOS FET MODULE	75004142			
99	R001	LCD PANEL, L3P07X-66G00R	75005354			
100	R002	LCD PANEL, L3P07X-65G00R	75005351			
101	S1605	SWITCH, TACT, TSW-6A-1-16-T50	75004139			
102	S501	SWITCH, SLIDE, SLD-12-500	75004138			
103	SP200	SPEAKER, RFF-0401C-02	23351359			
104	U001	PC BOARD ASSY, MAIN, FX5MA2, TLP-X3000	75005345			
105	U002	PC BOARD ASSY, RELAY, FX5RE2, TLP-X3000	75005346			
106	U003	PC BOARD ASSY, EXHAUST SENSOR, FX5EX2, TLP-X3000	75005347			
107	U004	PC BOARD ASSY, SENSOR, FX5SE2, TLP-X3000	75005348			
108	U005	PC BOARD ASSY, DOOR SWITCH, FX5DR2, TLP-X3000	75005349			
109	U006	PC BOARD ASSY, KEY, FX5KY2, TLP-X3000	75005350			
110	U007	PC BOARD ASSY, RELAY, FX2RL2	75004131			
111	Y100	CABLE, RGB, BLUE	23368955			
112	Y200	OWNERS MANUAL, CD-ROM AND BOOKLET, X3000UEBJ	75005368			
113	Y200	OWNERS MANUAL, CHINESE, X3000C	-----	-----	-----	75005668
114	Y260	POWER CORD, UL 125V 10A, 3M		-----	23372148	-----
115	Y260	POWER CORD, EU	23372167	-----	-----	-----
116	Y260	POWER CORD, UK		23372337	-----	-----
117	Y260	POWER CORD, CHINA	-----	-----	-----	23372155
118	Y700	REMOCON HAND UNIT, CT-90266	75004774			
119	Y702	REMOCON RECIVER, IR, MOUS, CR-916	23306621			
120	Z100	FAN, TYF450FJ06	75004190			
121	Z100	OPTICAL BLOCK, CJ589TA	75005360			
122	Z101	FAN, TYF400FJ10	75004160			
123	Z102	FAN, D05F-12BS2 02A	23125960			
124	Z103	FAN, TYF310FJ11	75004159			
125	Z104	FAN, D05F-12PS7 01A(EX)	75004191			
126	Z105	FAN, D07R-12TH 03A(EX)	75004192			
127	Z200	OPTICAL BLOCK, SUB ASSY, 589SUB	75005362			
128	Z201B	POLARIZER, 591IN-B	75004210			
129	Z201G	POLARIZER, 591IN-G	75004209			
130	Z201R	POLARIZER, 591IN-R	75004208			
131	Z202B	OPTICAL FILTER, 589OUT-B	75005365			
132	Z202G	OPTICAL FILTER, 589OUT-G	75005364			
133	Z202R	OPTICAL FILTER, 589OUT-R	75005363			
134	Z205	LENS, 589LENS	75005361			

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